

City of Commerce
Source Reduction and Recycling Element
Final Draft

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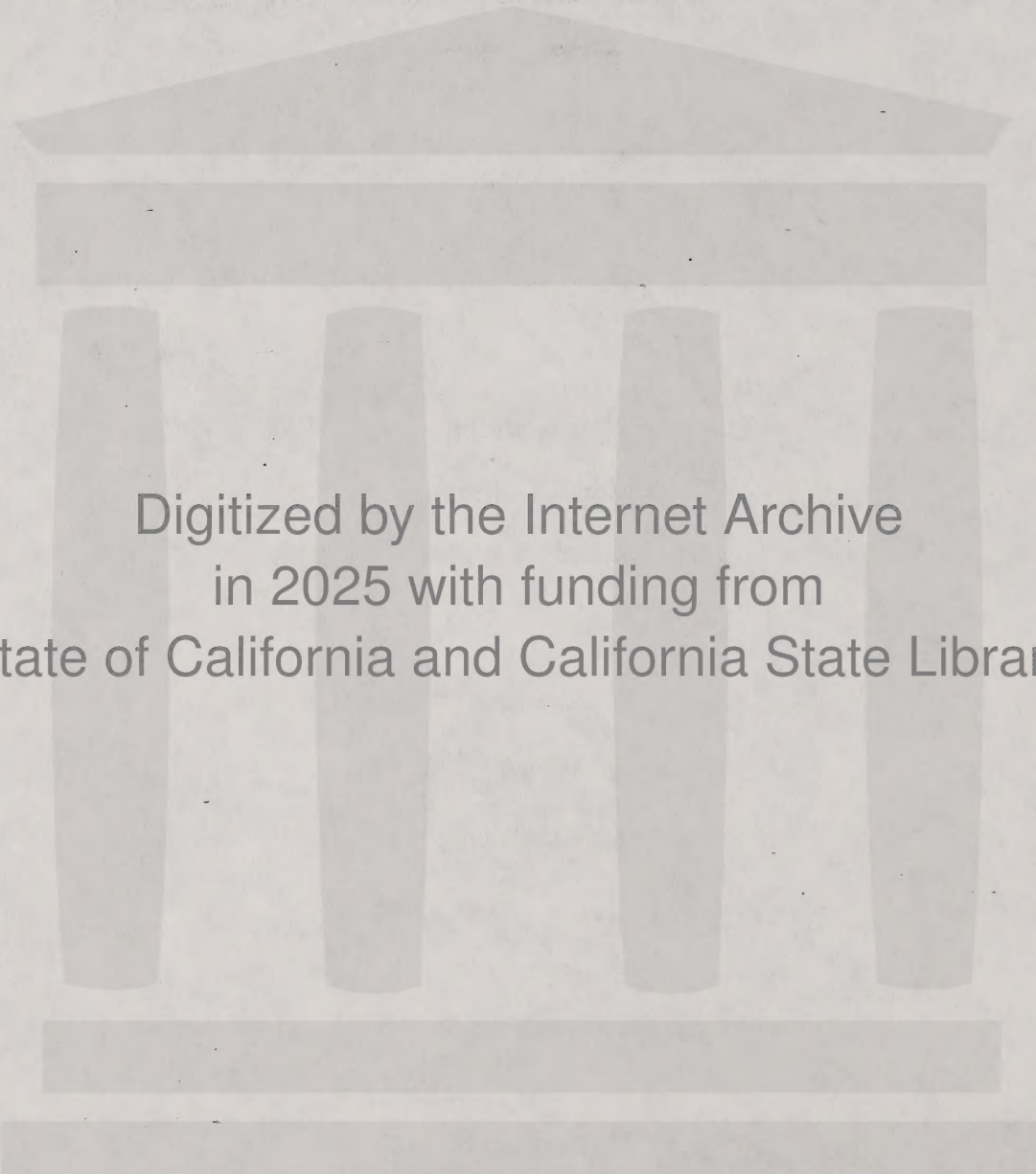
Prepared for
City of Commerce
December 1991



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Project F33-01.01



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EXECUTIVE SUMMARY

EXECUTIVE SUMMARY

The City of Commerce's Source Reduction and Recycling (SRR) and Household Hazardous Waste (HHW) elements were developed in response to Assembly Bill 939, the California Integrated Waste Management Act of 1989 (AB 939). AB 939 requires every city and county in the State of California to prepare an SRR element that identifies how each jurisdiction will meet the mandatory waste diversion goals set by the State of 25% by 1995 and 50% by 2000. The law also requires every jurisdiction to develop an HHW element to plan for the proper management of hazardous wastes that are generated by households. This section presents a summary of each of the components included in the SRR and HHW elements.

SOLID WASTE GENERATION STUDY COMPONENT

A solid waste generation study was conducted to quantify and characterize the solid waste generated, diverted, and disposed by the City of Commerce (City). Results of the solid waste generation study are summarized in Figure 1. Currently, 92,665 tons of solid waste are generated in the City annually. Through a number of existing diversion programs operated by the City and by the private sector, 20,784 tons annually are diverted from disposal. This existing level of solid waste diversion equals approximately 22.4% of the current solid waste generation. Of this amount, 55% is diverted by the industrial sector, 34% by the commercial sector, and 11% by the residential sector.

The waste stream composition is presented in Figure 2. This is the combined waste stream composition from the residential, commercial, and industrial sectors.

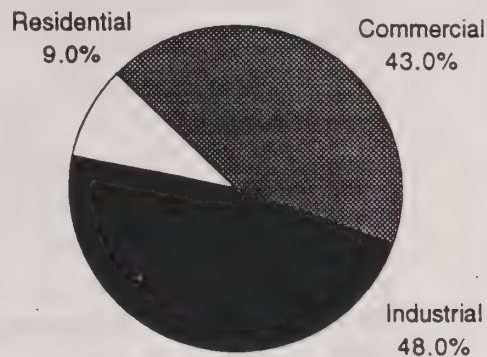
SOURCE REDUCTION COMPONENT

Source reduction simply means producing less waste. Because source reduction is intangible, it is the most difficult to quantify. Some examples of existing source reduction activities in the City include appliance repair, the use of diaper services, backyard composting, and donations. Total

Figure 1
Solid Waste Generation Analysis
City of Commerce

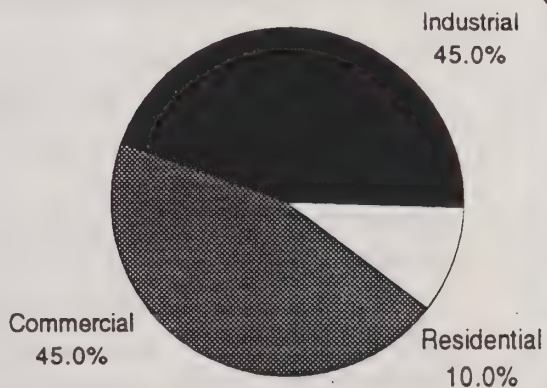
Solid Waste Generation (tons/year)

Residential	9,083
Commercial	39,528
Industrial	44,099
Total	<u>92,665</u>



Solid Waste Disposal (tons/year)

Residential	6,861
Commercial	32,536
Industrial	32,530
Total	<u>71,881</u>



Solid Waste Diversion (tons/year)

Current diversion rate = 22.4%

Residential	2,223
Commercial	6,992
Industrial	11,569
Total	<u>20,784</u>

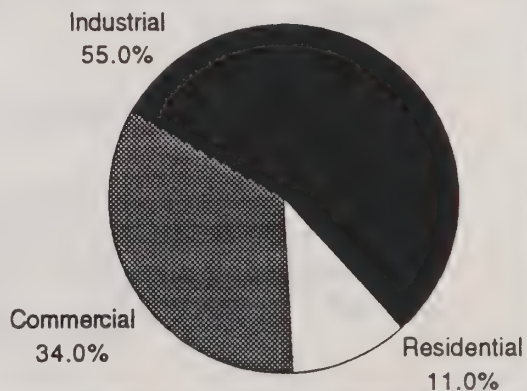
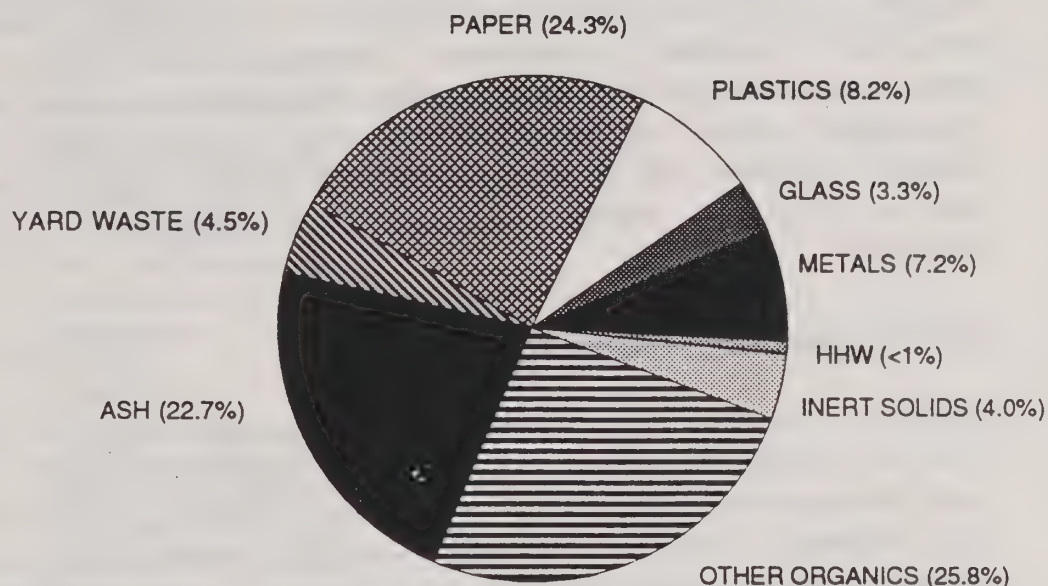


Figure 2
Disposal Waste Stream Composition
City of Commerce



PAPER: newspaper, corrugated containers, brown paper bags, high grade ledger, mixed paper, other paper

PLASTICS: high-density polyethylene (HDPE) containers, polyethylene terephthalate (PET) containers, film plastics, other plastics

GLASS: California redemption value glass, other recyclable glass, other nonrecyclable glass

METALS: aluminum cans, bi-metal containers, ferrous metals and tin cans, non-ferrous metals white goods, other metals

INERT SOLIDS: rock, concrete, brick, sand, soil fines, asphalt, sheet rock

HOUSEHOLD HAZARDOUS WASTES (HHW): household hazardous waste materials and discarded household hazardous waste material containers

YARD WASTE: grass, leaves, prunings

OTHER ORGANICS: food waste, wood waste, tires and rubber, manure, textiles and leather, disposable diapers, other miscellaneous organics

ASH: generated from the Commerce Refuse-to-Energy Facility

diversion as a result of identified source reduction activities is 145 tons per year, or 0.7% of the existing diversion in Commerce.

The materials typically targeted for source reduction such as other organics, paper, and plastic are currently being transformed at the Commerce Refuse to Energy Facility (CREF). These materials have a relatively high BTU content and are important to the economic viability of the CREF. Therefore, the City plans to address source reduction needs through implementation of an educational and public information program (workshops, school curricula, awards, and nonprocurement source reduction activities, etc). These programs are listed in Table 1; it is noted that no significant diversion increases are anticipated from these programs.

RECYCLING COMPONENT

Recycling activities and City-sponsored programs include curbside collection, buy-back centers, City Hall's recycling program, scrap, materials recycling, and inert solids recovery. The City currently diverts approximately 15,565 tons per year through recycling; this does not include construction and demolition debris or tires. This represents 13.6% of the annual waste generation rate.

To further increase recycling in Commerce, a number of new programs will be implemented and existing programs expanded. These programs are summarized in Table 1. These programs require capital expenditures for facilities and/or equipment including expansion of curbside recycling program, multifamily recycling, source separation, and mechanized materials recovery. Details on program funding are included in Section 9. These programs will be implemented in the short term and continued through the medium term.

Table 1
Alternatives Selected for Implementation

Program	Expected Diversion	
	Short Term (%)	Medium Term (%)
Source Reduction	0	0
• Educational Efforts • Awards • Nonprocurement Source Reduction Activities		
Recycling	3.5	17.9
• Residential Curbside Collection Expansion • At-Source Separation • Various Supportive Policies • Develop Material Recovery Operation at CREF • Transformation		
Composting	0.4	0.4
• Self-Haul Drop-off • Decentralized Preprocessing and Materials Storage • Yard Waste Composting • Promotion and Education • Regulatory Measures of Policies		
Special Waste	19.1	19.7
• Ash Recycling Program • Used Tire Program • Construction/Demolition Waste • White Goods Program		
Education and Public Information	(1)	(1)
• Residential Program - Promotional Campaign - Public Information Program • School Program - Waste Reduction/Recycling Curricula • Commercial/Industrial Program - Promotional Campaign - Public Information Program - Waste Audits • Government Program - Employee Training - Waste Audits		
Total Annual Diversion	23%	38%
With 22.4% Existing Diversion	45.4%	60.4%

(1) No diversion rates are anticipated for educational programs.

COMPOSTING COMPONENT

Composting can play a key role in the City's integrated waste management system. Yard waste and readily decomposable material make up a significant portion of the total waste stream. In 1990 the existing composting programs in Commerce resulted in a total of 184 tons of yard waste being diverted.

For future programs the City has targeted waste (grass, leaves, and prunings) composting. The composting program which will consist of the alternatives listed on Table 1, will be fully implemented in the short term and continue through the medium term. This program will contribute an additional 0.4% diversion in the short term and 0.4% diversion over the medium term. Costs associated with the various programs are presented in Section 9.

SPECIAL WASTE COMPONENT

Special waste includes difficult to handle materials such as tires, construction debris, white goods, sofas, and mattresses; and potentially hazardous wastes such as sewage, sludge, asbestos, auto bodies or ash. The special wastes addressed in this component include bulky items such as white goods and tires, inert solids such as demolition and construction waste, and incinerator ash from the Commerce Refuse to Energy Facility (CREF).

Four alternatives were evaluated and selected for implementation. Alternative 1 is an ash recycling program which will divert all of the ash generated at the CREF for production of useable products. Alternative 2 is a used tire program to divert used tires from the waste stream. Alternative 3 is a construction and demolition debris diversion program and Alternative 4 is a white goods recovery program. The expected diversion from all four programs is 18,210 tons (19.1%) in the short term (1995) and 19,228 tons (19.7%) in the medium term. Costs associated with this program are discussed in Section 9.

EDUCATION AND PUBLIC INFORMATION COMPONENT

Education and public information comprise the single most important element of any waste diversion program. Education and public information efforts targeting source reduction, recycling, composting,

special waste, and household hazardous waste are discussed in this component.

Based on the generators and targeted materials, a number of new programs are selected for implementation that target the residential sector, commercial/industrial sector, and schools. Two programs, shown on Table 1, are recommended for the residential sector, three programs for the commercial/industrial sector, two programs for governmental facilities, and one for the schools. All programs will be implemented within the short-term planning period and continue into the medium-term.

DISPOSAL FACILITY CAPACITY COMPONENT

Integrated waste management includes the environmentally safe transformation of solid waste. The City of Commerce has its own refuse to energy facility and the ash is disposed of at the Puente Hills Landfill under agreement with the Los Angeles County Sanitation Districts. Based on the capacity projections, the City will need to secure export agreements for disposal of 37,235 cubic yards in the short term (by 1995) and 38,928 cubic yards in the medium term (by 2000) outside the City if no diversion programs are implemented. If the proposed programs are implemented, the City will require a maximum of 33,075 cubic yards of capacity in the short term and no outside capacity by the medium term.

FUNDING COMPONENT

The funding component demonstrates that the City has the ability to generate funds and allocate resources to plan, develop, and implement the various programs identified in this document. All current refuse collection and disposal activities are funded through the General Fund. Costs are recovered primarily through user charges. The City will continue to use the General Fund for funding residential programs.

Commercial and industrial programs will be financed through a Gross Receipts Fee of approximately 7% to 10% to be paid by the City-licensed refuse haulers.

The costs for implementing this SRR element are summarized in Table 2; the costs presented reflect all of the known costs. These costs are presented by year for the short-term period in Section 9.

Major capital costs include the construction and startup on the ash treatment facility at the CREF and development of a Materials Recovery Facility.

Table 2**Source Reduction and Recycling Element
Implementation Costs**

Component	Capital Costs (\$)	Annual Costs (\$)
Source Reduction	0	80,000
Recycling	1,027,200	210,750
Composting	0	45,000
Special Waste	2,605,250	637,500
Education and Public Information	90,000	45,000
Total	\$3,722,450	\$1,018,250

The City will need to add two new positions for solid waste management in the short-term planning period to help carry out the component programs.

INTEGRATION COMPONENT

This section provides a summary of the solid waste management practices proposed in this Source Reduction and Recycling Element. It includes explanations of how the programs work together to maximize the feasibility of source reduction, recycling, and composting options and jointly achieve the diversion mandates. Consistent with the State's integrated waste management hierarchy, the City will promote source reduction activities targeted at decreasing the amount of solid waste being generated. For those wastes that continue to be generated, recycling and composting programs will divert waste from disposal. If a waste cannot be diverted, the City will insure that it is landfilled in an environmentally safe manner. The combination of component programs will divert an additional 23% of solid waste in the short term and 38% in the medium term. These figures, combined with the existing diversion rate of 22.4%, equal 45.4% diversion in the short term and 60.4% diversion in the medium term. This diversion, when realized by 2000, will exceed the State-mandated goal of 50%.

HOUSEHOLD HAZARDOUS WASTE ELEMENT

Household hazardous wastes are any household discarded materials that may threaten human health or the environment if disposed of improperly. Potential hazards are found in materials that are toxic, flammable, corrosive, or reactive.

Several alternatives were considered for the City's household hazardous waste program. The City will continue to participate in the periodic round-up events sponsored by the LACSD and Los Angeles County DPW until the permanent County program is in place. The City will also participate in the permanent County program, which will use mobile collection facilities for regularly scheduled collection events. The load-checking programs will continue at all landfills used by the City. There is no capital investment by the City for participation in the County program. The County will completely fund the permanent program and recover costs through a surcharge on the fees at all landfills in the County.

1 INTRODUCTION

1 INTRODUCTION

1.1 PURPOSE OF PLAN

The City of Commerce's Source Reduction and Recycling (SRR) element was developed in response to Assembly Bill 939, the California Integrated Waste Management Act of 1989 (AB 939). AB 939 requires every city and county in the State of California to prepare a SRR element that identifies how each jurisdiction will meet the mandatory waste diversion goals set by the State of 25% by 1995 and 50% by 2000. This SRR element identifies how the City of Commerce will achieve these goals. Upon review and adoption of this plan by the City of Commerce, the SRR element will be submitted to Los Angeles County (County) for incorporation into the Countywide Integrated Waste Management Plan (CIWMP).

This SRR element is consistent with Public Resources Code Section 40000 et seq., and the draft regulations developed by the California Integrated Waste Management Board (CIWMB) entitled "Planning Guidelines for Preparing, Revising and Amending Countywide Integrated Waste Management Plans," dated December 5, 1990. These draft regulations will amend the emergency regulations that were in effect during the development of this SRR element. The emergency regulations are found in Title 14 of the California Code of Regulations (CCR), Chapter 9.

1.2 STUDY APPROACH

The cities of Artesia, Bell, Bellflower, Bell Gardens, Cerritos, Commerce, Compton, Cudahy, Downey, Hawaiian Gardens, Huntington Park, La Mirada, Lakewood, Lynwood, Maywood, Norwalk, Paramount, Pico Rivera, Santa Fe Springs, Signal Hill, South Gate, Whittier, and the County of Los Angeles entered into the Southeast Area Integrated Waste Management Memorandum of Understanding (MOU). The MOU was made for the purpose of enabling the cities to exercise their power jointly to conduct the studies required by AB 939. The MOU created an entity known as the Southeast Area Integrated Waste Management Working Group (Working Group). Figure 1-1 illustrates the project area boundaries and members of the Working Group.

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The Working Group believed that significant economies of scale could be achieved through regional cooperation in all phases of the work. The contiguous nature and common geographic, cultural, and demographic features of these cities provide a sound basis for this working relationship.

The development of the SRR element was conducted in two phases: the solid waste generation study (SWGS) and the development of the component programs. The purpose of the SWGS was to identify and quantify the types and sources of solid wastes being generated, disposed and diverted by the City.

To initiate the development of the various components of the SRR element, a local conditions survey was distributed to every member of the Working Group. The survey addressed a number of features which characterized the City such as population, housing, business composition, and waste management practices, to name a few. Review of the information provided by the Cities indicated many common characteristics which provided a rational basis for creating subgroups within the Working Group. The subgroups are as follows:

- A: Industrialized Cities Group including Santa Fe Springs, Signal Hill, Commerce, and nearby unincorporated Los Angeles County areas.
- B: Mixed Residential and Commercial Cities Group including South Gate, Lynwood, Paramount, Compton, and nearby unincorporated County areas.
- C: Primarily Residential Cities Group including Norwalk, Cerritos, Lakewood, Artesia, La Mirada, Whittier, Bellflower, Downey, Hawaiian Gardens, Pico Rivera, and nearby unincorporated County areas.
- D: Primarily Small, Dense Residential Cities Located Within Industrial Zones Group including Bell, Cudahy, Maywood, Huntington Park, Bell Gardens, and nearby unincorporated County areas.

Many of the unique attributes and characteristics of each City were accounted for during evaluation of alternatives for each component.

The results of the SWGS, the City groupings, and the local conditions survey were evaluated and used as the basis for the development of the selected source reduction, recycling, composting, public education, and

special waste programs. The selected programs are described in detail in subsequent sections of this SRR element.

1.3 EVALUATION CRITERIA

The criteria that will be used in Sections 3, 4, 5, and 6 to evaluate alternative source reduction, recycling, composting, and special waste programs for the City have been compiled from the California Integrated Waste Management Board's "Planning Guidelines" and from needs presented by the various components. All criteria have been assigned a scale of high, medium, and low. A high score indicates favorable (or positive) conditions. A low score indicates less favorable (or negative) conditions. The first ten criteria listed correspond to those specified in the regulations; the second set of criteria provide additional evaluation mechanisms which were not specifically required by the regulations.

Regulatory Criteria

- Effectiveness in reducing waste quantity
- Absence of hazards
- Flexibility
- Limited shift in waste type generation
- Implementability
- Facility needs
- Consistency with local policies
- Absence of institutional barriers
- Estimated cost rating
- End uses

Additional Criteria

- Ease of financing
- Technical reliability
- Equipment and personnel availability
- System compatibility
- Public acceptability

- Private acceptability
- Private sector participation

These criteria are described in detail in Appendix A.

1.4 COMMUNITY PROFILE

The City of Commerce is located in southeast Los Angeles County approximately 7 miles southeast of downtown Los Angeles. The City is bordered on the north by East Los Angeles, on the south by the City of Bell Gardens, on the east by Montebello, and on the west by the Cities of Maywood, Vernon, and Bell. Commerce covers approximately 6.54 square miles and consists of a mixture of residential, commercial, industrial, and open-spaced land uses. According to information provided by the State Department of Finance (January 1, 1990) the City's population is 11,863 and the total number of housing units within the City is 3,325 units. There are 2,480 single-family dwellings, which represents 74.6% of the total residential units. Multifamily residential dwellings makeup 25.4% (or 839) of the total residential units. City staff also reported that the 1,496 companies in the City employ more than 45,000 men and women. The ten largest employers within the City employ more than 12,521 men and women. These employers on average employ well over 1,000 employees each. The largest employers include the following;

- Certified Grocers of California, Ltd.
- Commerce Casino
- Lever Brothers Company
- Sinclair Paint Company
- Anderson Lithograph Co., Inc.
- Union Pacific Railway Company
- Pacific Bell
- Pauly, Inc.
- International Tropic-Cal, Inc.
- Monogram Aerospace Fasteners

The overall population is approximately of 93% Hispanic, 3.3% Caucasian, 1.9% Black and less than 1% Asian. The average per capita income for residents is \$12,134 annually. Additional information on the City's demographics is presented in Figure 1-2.

1.5 CURRENT SOLID WASTE MANAGEMENT PRACTICES

Solid waste generated within the City is collected by the 53 commercial haulers licensed in the City. Metropolitan Waste Disposal, one of the licensed haulers, also hauls the residential waste under a separate contract. All commercial, residential, and light industrial waste is taken to Commerce Refuse-to-Energy Facility in Commerce. The remaining waste (i.e., construction material, demolition material, ash, and heavy industrial waste) is taken to the Puente Hills Landfill for disposal.

The City has a pilot curbside collection program for 570 households that was implemented on December 1, 1990. This program applies only to residential uses and coincides with City Hall's office-paper recycling program which was also implemented in December 1990. The City of Commerce has also initiated a public education program which includes a quarterly newsletter to the general public and commercials on the local cable television station. In addition to the City-sponsored programs, there are several privately owned and operated recycling facilities located throughout the City of Commerce.

1.6 INTEGRATED WASTE MANAGEMENT PROGRAM GOALS

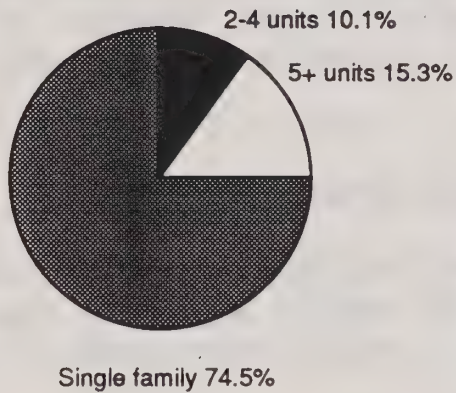
The City of Commerce is committed to addressing solid waste concerns and system needs through the development of a comprehensive integrated waste management program. The City's goals for integrated waste management and the development of the SRR element include:

- To provide cooperation with adjacent jurisdictions in integrated waste management planning and implementation.
- To meet the diversion requirements mandated by the Integrated Waste Management Act of 1989.

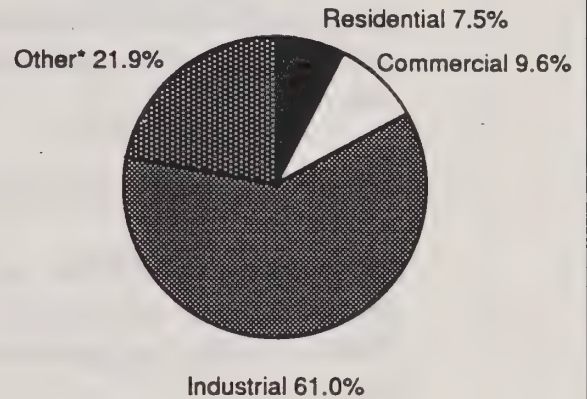
Figure 1-2

Community Profile

Housing



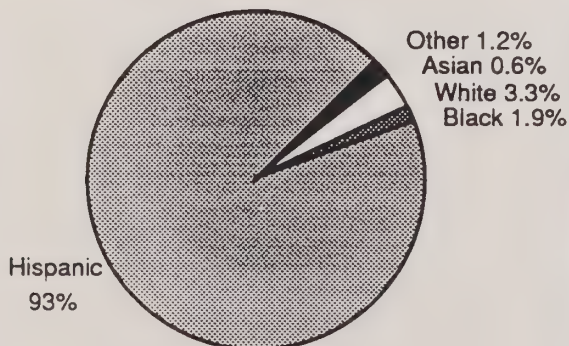
Land Use



* Public/Quasi-public/Parkland/Circulation
 Ref: City of Commerce; CBA; Land use Survey

Population

Ethnic Breakdown



Economy

Median Household
 Income (1979) \$15,292

Average Per Capita
 Income (1988) \$12,134

Number of Businesses (1)

Commercial (1991)	1,538	(66%)
Industrial (1991)	794	(34%)
Total	2,332	

(1) Ref: Compiled by Decision Sciences from
 Southern California Edison data.

- To achieve high levels of source reduction, recycling, and composting by residential, commercial, and industrial waste generators.
- To assist in the development of local, regional, state, and international markets for diverted materials.
- To provide safe disposal of household hazardous waste.

These goals represent Commerce's commitment to a comprehensive integrated waste management program. Specific objectives for each component of this SRR element are included in subsequent sections of this document.

1.7 ORGANIZATION OF THE SRR ELEMENT

In accordance with the regulations implementing AB 939, this document presents each component of the SRR element as listed in Table 1-1. Reference to the applicable section number in the regulations is also provided.

The organization of topics within each component generally follows the format presented below. The format deviates slightly between sections as applicable to each respective component:

- Introduction
- Objectives
- Existing Conditions
- Program Alternatives
- Program Selection
- Program Implementation
- Monitoring and Evaluation

Table 1-1

SRR Element Organization

SRR Element Section	Regulatory Reference
2- Solid Waste Generation Study and Analysis	Article 6.1 and Section 18732
3- Source Reduction Component	Section 18734
4- Recycling Component	Section 18735
5- Composting Component	Section 18736
6- Special Waste Component	Section 18737
7- Education and Public Information Component	Section 18740
8- Disposal Facility Capacity Component	Section 18744
9- Funding Component	Section 18746
10- Integration Component	Section 18748

2 SOLID WASTE GENERATION STUDY AND ANALYSIS

2 SOLID WASTE GENERATION STUDY AND ANALYSIS

This component contains the results of the solid waste generation study conducted for the City of Commerce and presents an analysis of the quantities, types, and sources of materials currently being disposed and diverted. It also includes a 15-year projection of the amount and types of waste expected to be generated, diverted, and disposed under current solid waste management practices, as well as under the conditions expected to be realized after the City implements the Source Reduction and Recycling Element.

A detailed written description of the study methodology was prepared and reviewed with the staff of the CIWMB. Upon completion of the review, the methodology was finalized and implemented. A copy of the final methodology and correspondence received from CIWMB staff during the review process are included in Appendix B-1.

The results of the solid waste generation study (SWGS) are presented at the beginning of this chapter (Section 2.1). Following this section, more detailed information is presented on each of the components of the SWGS: waste disposal (Section 2.2) and waste diversion (Section 2.3). Data collection methods to be utilized by the City in the future are addressed in Section 2.4. Waste generation tables are presented in Section 2.5. The results of the waste disposal and waste diversion studies were combined with population forecasts to develop the 15-year solid waste generation projections presented in Section 2.6. Materials targeted for diversion and disposal are presented in Section 2.7 and 2.8, respectively.

2.1 SOLID WASTE GENERATION STUDY RESULTS

The total solid waste generated by the City of Commerce can be expressed as the following equation:

$$\text{generation} = \text{disposal} + \text{diversion}$$

Since solid waste generation cannot be directly measured the SWGS was conducted in two parts: 1) a waste disposal study, and 2) a waste diversion study. Both the quantity and composition of the solid waste were evaluated in each part.

The quantity of solid waste generated, disposed, and diverted by the City during 1990 is presented in Figure 2-1. Approximately 92,665 tons of waste are generated in the jurisdiction each year. Of this, 71,881 tons are disposed and 20,784 tons are diverted, resulting in a current diversion rate of 22.4%.

The composition of the solid waste disposed by the City is presented in Figure 2-2. This composition profile is representative of the entire waste stream: residential, commercial, and industrial waste. Paper and other organics represent over 50% of the disposed waste stream. The paper component is a combination of corrugated containers and mixed paper, while the other organics are primarily food and wood waste. Special wastes, namely ash from the refuse-to energy plant, account for 22.7% of the waste disposed in the City. Figure 2-3 shows the disposal composition profile broken down by residential, commercial, and industrial sources.

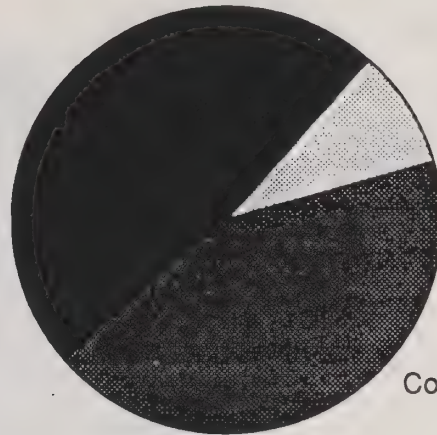
FIGURE 2-1

Solid Waste Generation Analysis City of Commerce

Solid Waste Generation (tons/year)

Residential	9,038
Commercial	39,528
Industrial	<u>44,099</u>
Total	92,665

Industrial
48%



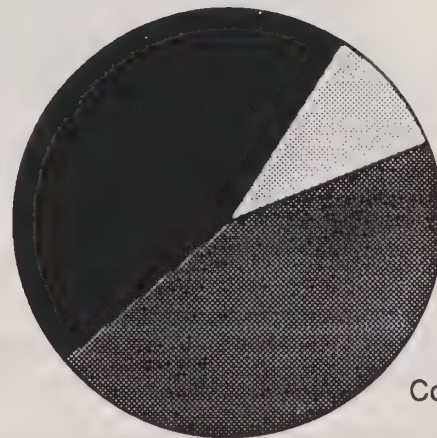
Residential
9%

Commercial
43%

Solid Waste Disposal (tons/year)

Residential	6,815
Commercial	32,536
Industrial	<u>32,530</u>
Total	71,881

Industrial
45%



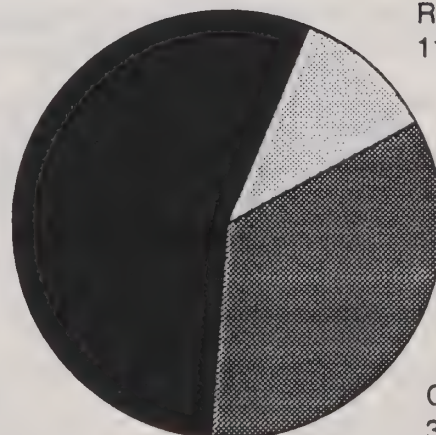
Residential
10%

Commercial
45%

Solid Waste Diversion (tons/year)

Residential	2,223
Commercial	6,992
Industrial	<u>11,569</u>
Total	20,784

Industrial
55%

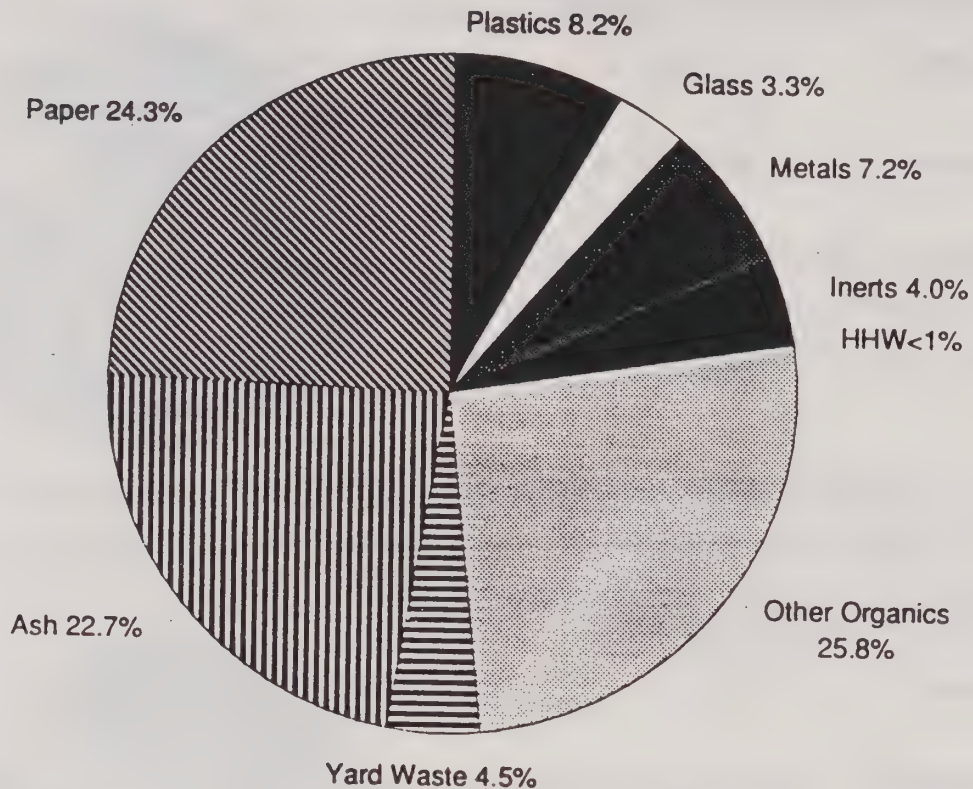


Residential
11%

Commercial
34%

Figure 2-2

Disposal Waste Stream Composition



PAPER: newspaper, corrugated containers, brown paper bags, high grade ledger, mixed paper, other paper

PLASTICS: high-density polyethylene (HDPE) containers, polyethylene terephthalate (PET) containers, film plastics, other plastics

GLASS: California redemption value glass, other recyclable glass, other nonrecyclable glass

METALS: aluminum cans, bi-metal containers, ferrous metals and tin cans, non-ferrous metals, white goods, other metals

INERT SOLIDS: rock, concrete, brick, sand, soil, fines, asphalt, sheet rock

HOUSEHOLD HAZARDOUS WASTES (HHW): household hazardous waste materials and discarded household hazardous waste materials containers

YARD WASTE: grass, leaves, prunings

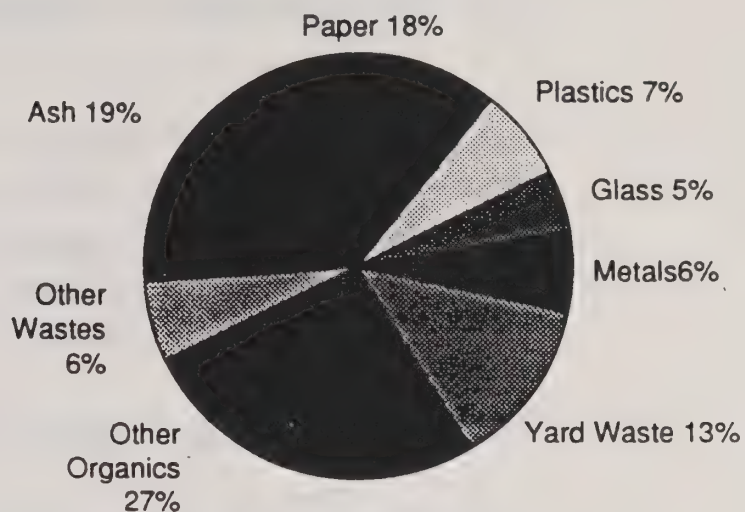
OTHER ORGANICS: food waste, wood waste, tires and rubber, manure, textiles and leather, disposable diapers, other miscellaneous organics

SPECIAL WASTES: ash, industrial sludge, sewage sludge, asbestos, auto shredder, auto bodies, other special wastes

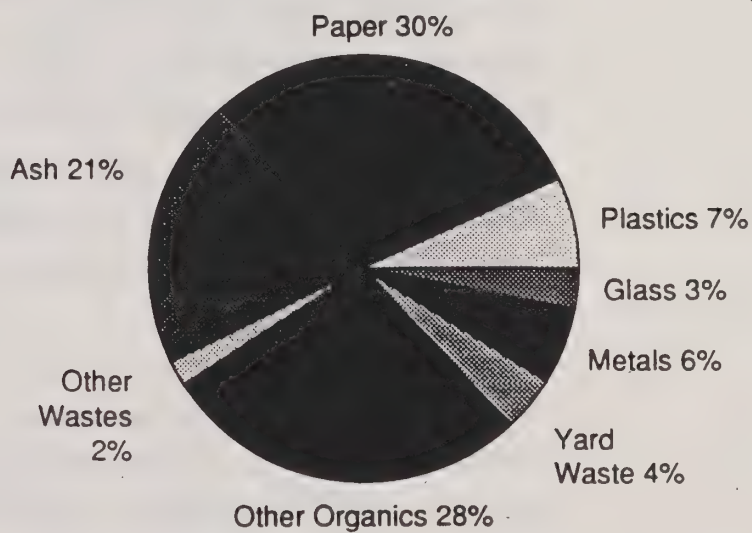
FIGURE 2-3

**Disposal Wastestream Composition
By Source - City of Commerce**

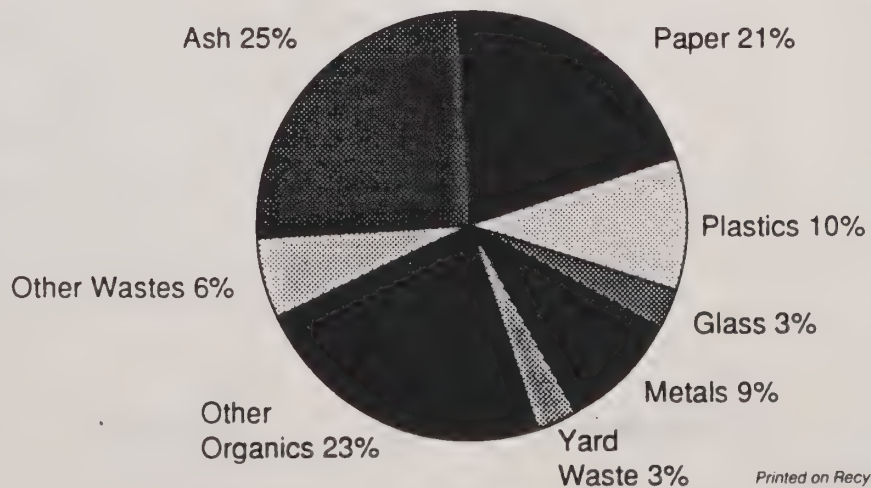
RESIDENTIAL WASTE



COMMERCIAL WASTE



INDUSTRIAL WASTE



2.2 SOLID WASTE DISPOSAL CHARACTERIZATION STUDY

The solid waste disposal study was designed to define both the quantity and type of wastes that are currently being disposed by generators within the City. The study methodology was developed based on a review of demographic, economic, and waste collection and disposal information provided by the City on the Local Conditions Survey.

2.2.1 Solid Waste Disposal Quantities

To obtain an estimate of the quantities and sources of waste currently being disposed by generators in the City, the solid waste collection and disposal practices were evaluated. Currently, solid waste is collected within the City by 53 private haulers, and the L.A. County Sanitation Districts. Self-haul is done by private residents and businesses. Street sweepings are collected and disposed by a private company under contract. A description of the private, self-haul, and street sweeping collection and disposal activities and quantities is provided below.

Private Services. The numerous private waste haulers provide collection services to all generating sources in the City: residential, commercial, industrial, and construction and demolition. The L.A. County Sanitation Districts disposes of ash generated from the waste-to-energy plant. The following page lists the private haulers who currently have a license to haul in the City.

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- A.K. Disposal
- A M Disposal
- A Rubbish Company
- A-1 Disposal
- AAA Rubbish Inc.
- Able Rubbish Service
- Alex's Rubbish Service
- All Service Disposal
- American Reclamation
- American Waste Disposal
- Art's Disposal
- Athen's Disposal
- Berco Rubbish Service
- Browning-Ferris Industries
- California Disposal
- California Wood Shavings
- Cal-Western Disposal
- CMD Refuse Removal Service
- Century Disposal Service
- City Wide Rubbish Service
- Commercial & Home Rubbish Company
- East and Waste Disposal Company
- Frenchy's Paper Disposal
- G.B.Rubbish
- G.H. Disposal Service, Inc.
- Goodwill Disposal
- Haul-Away Rubbish Company
- Hi Waste Disposal
- J.J.V. Disposal
- Key Disposal
- Kleen Rite Disposal
- Klistoff & Son Disposal Company
- Mendoza Rubbish
- Metropolitan Waste Disposal
- Mid-City Waste Disposal
- Morrie's Rubbish Service
- Naz Disposal
- Olympic Disposal Company
- P.J.B. Disposal Company
- Peerless Disposal Service
- Perdomo & Sons, Inc.
- Pioneer Disposal
- Ready Rubbish
- S & P Rubbish
- Sav Way Rubbish
- Tom Mendrin Rubbish Disposal
- Union Rubbish Company
- Universal Waste
- Van Disposal Service
- Veteran's Disposal
- Waste Management
- Western Waste Industries
- Wilshire Disposal Service

To determine the amount of solid waste being collected by haulers, a survey (Appendix B-2) was distributed to each hauler. The survey requested information about the number and type of accounts as defined by the state (residential, commercial, industrial, construction and demolition, and other), the quantity collected from each type of account, the extent of any recycling services they provide to their clients, the disposal site(s) used, and the seasonal variations in waste collected. Follow-up telephone calls were made to the haulers to confirm the information.

An estimate of the quantities and types of waste collected by the haulers was calculated based on the results of the survey. The estimated amount of solid waste collected by private haulers is 69,086 tons per year. This solid waste is primarily disposed in local landfills or incinerated at CREF. To avoid double-counting, the quantity of ash resulting from the incineration of Commerce's waste at CREF was not included in the total.

Waste collected in the City by private haulers is being disposed at the Commerce refuse-to-energy plant, and to a lesser degree, landfills and transfer stations in the local area, including the following:

- Puente Hills Landfill
- Spadra Landfill
- BKK Landfill
- Nu-Way Industries Landfill
- Waste Transfer & Recycling
- Central LA Transfer and Recycling
- South Gate Transfer Station
- Bel-Art Transfer Station

Self-Haul Disposal. Four potential sources of self-haul waste were identified: residential, business, contractors, and landscapers. However, there are no records regarding the precise quantities or types of self-haul wastes disposed by these sources. According to information provided by the Sanitation Districts of Los Angeles County (operators of the Puente Hills and Spadra landfills), approximately 6% of all wastes received are

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from self haul loads. However, the City's geographic proximity to alternative disposal and diversion facilities, mainly United Pacific Corporation's green waste processing facility, resulted in less self-haul waste being taken to the landfill by local gardeners and landscapers. As a result, the self-haul waste was estimated to be only half (3%) of average reported by the Sanitation Districts. Self-haul waste was allocated equally to commercial and residential sources for the purposes of quantifying total waste disposal. The total quantity of waste self-hauled in Commerce is estimated to be 2,102 tons per year.

Street Sweeping. Street sweepings comprise another source of waste collected in the City. Collection and disposal of these wastes is provided by R.F. Dickson Company under contract with the City. According to information obtained from this company, approximately 693 tons of street sweepings are collected and hauled from the City for disposal annually. Street sweepings were allocated to commercial sources for the purposes of quantifying total waste disposal.

Summary. Based on the information presented above, the overall quantity of waste disposed at the refuse-to-energy plant, landfills and at transfer stations is estimated to be 71,881 tons per year. A breakdown by generating source is provided in Figure 2-1.

Table 2-1
Solid Waste Disposal Estimates

Waste Source	Haulers	Self-Haul / Street Sweeping	Total
Residential	5,764	1,051	6,815
Commercial	30,792	1,744	32,536
Industrial	32,530	0	32,530
Total	69,086	2,795	71,881

The destination of all waste disposed is summarized in Table 2-2 below. As required by CCR Sections 18722 (f) (4) and (i), the quantity of solid wastes disposed is reported in both volume and weight. The volume measurement is expressed in terms of in-place volume in the landfill, after compaction, as measured in a waste cell in the upper lift of a waste management unit. The conversion factor is fully referenced at the bottom of Table 2-2.

**Table 2-2
Total Waste Disposal - Destination**

Destination	Weight (TPY)	Volume (CY)*	Percent
Landfill	30,799	51,332	43
Transfer Station**	3,029	5,048	4
Transformation	38,053	63,422	53
Total	71,881	119,802	100

* 1200 lbs./cu yd. compacted refuse in a landfill

(Source: NSWMA Technical Bulletin #85-6, October 1, 1985.)

** Transfer stations are not the ultimate point of disposal. See Page 2-8 for list of landfills.

2.2.2 Seasonal Variations

The private haulers operating in the City were surveyed to evaluate the seasonal variations in waste disposal throughout the year. The haulers were asked to state any change in tonnage due to climactic factors, tourism, trade or commerce, or other reasons. The haulers did not specify any changes due to seasonal variations, and did not present any information documenting variations. However, it should be noted that many haulers operating in the surrounding area reported slight increases in the residential waste stream during the spring and summer months

due to increased yard waste. It also should be noted that no major seasonal variations in employment or tourism are evident in Commerce. In conclusion, there is no well-defined seasonal variation in either the residential, commercial, or industrial waste streams based on the information available.

2.2.3 Solid Waste Disposal Composition

A common solid waste composition analysis was undertaken for all of the Cities in the working group with the exception of the Cities of Santa Fe Springs and Signal Hill. These two Cities commissioned separate SWGS's for their jurisdictions and were therefore not included in this waste composition study.

The solid waste composition study was designed to take advantage of the similarities in the characteristics of the Cities in the working group. The contiguous nature and common geographic, cultural, and demographic features of the Cities provided a sound basis for this approach.

During the initial project meetings, the members of the working group expressed an interest in the use of comparative waste composition data from other jurisdictions in lieu of actual field sampling to determine the composition of the waste disposed by the Cities. Rather than rely strictly on data from other jurisdictions, the project team developed a methodology that was based on limited local field sampling to establish a baseline for the composition of the waste from local generation sources. The validity of the results of the local field sampling would be verified through comparisons with the data from other similar jurisdictions.

An initial review of the local conditions surveys for each city indicated that, for the purposes of conducting the waste composition study, it was not practical or advisable to consider the entire working group as a single waste generator. Among the Cities in the working group, per capita income ranged from \$5,405 to \$13,664, and the ratio of single-family to

multifamily housing units ranged between 91%-9% to 43%-54%. However, there was sufficient commonality among certain Cities to consider specific groupings of the Cities as single generators. Therefore a methodology was developed that relied on a careful analysis of the characteristics of each of the cities to provide the basis for the organization of the cities into separate residential, commercial, and industrial groups.

Development of City Profiles. To provide the basis for grouping the cities, a residential, commercial, and industrial profile of each City was developed. The profiles were intended to describe the characteristics of a sector of the City in terms that would be indicative of the waste generation patterns of that sector.

Residential Profiles. The residential profile was developed by using data from the local conditions surveys, the city planning departments, the Southern California Association of Governments (SCAG), and the California Department of Finance. The specific information in the residential profile included:

- population
- mix of single and multi-family dwelling units
- average per capita income
- number of persons per household
- average population and housing density

Commercial Profiles. The commercial profiles were a summary of the number of City businesses in Standard Industrial Classification (SIC) codes 50 to 97 (see Appendix B-3). This information was obtained from the U.S. Census Bureau, the Pacific Bell marketing database, and the City businesses license listings. The businesses were grouped as follows:

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<u>Type of Business</u>	<u>SIC Code Range</u>
Wholesale	50 - 51
Retail	52 - 59
Finance, Insurance & Real Estate	60 - 67
Services	70 - 89

Industrial Profiles. The industrial profiles were a summary of the number of City businesses in SIC codes 10 to 49. The businesses were categorized as follows:

<u>Type of Business</u>	<u>Range of SIC Codes</u>
Mining	10 - 14
Construction	15 - 17
Manufacturing	20 - 39
Transportation & Utilities	40 - 49

Grouping of Cities. After compiling and reviewing the profiles, the Cities were organized into three residential groupings, three commercial groupings, and two industrial groupings. The City of Commerce was included in the following groups:

- Residential Group 1
- Commercial Group 2
- Industrial Group 2

The groupings were intended to provide the basis for conducting the waste disposal composition studies for all the Cities. For the purposes of these studies, all cities in a group would be considered as a single waste generator. The results of the waste composition study conducted for each group would be used to represent the waste characterization profile of all cities in that group.

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The characteristics of each grouping were as follows:

Table 2-3

Residential Groupings -- Average Values

<u>Factor</u>	<u>Group 1</u>	<u>Group 2</u>	<u>Group 3</u>
Housing Units			
% Single Family	57.7%	66.6%	77.3%
% Multi-Family	39.9%	29.9%	22.1%
Per Capita Income	\$6,599	\$8,595	\$13,232
Persons/Household	3.73	3.47	2.92
Housing Units/Acre*	12.6	11.6	6.1
Persons/Acre*	44.9	39.6	18.6
* per acre zoned residential			

The cities included in each residential group were as follows:

<u>Group 1</u>	<u>Group 2</u>	<u>Group 3</u>
Bell	Artesia	Cerritos
Bell Gardens	Bellflower	Downey
Commerce	Norwalk	La Mirada
Compton	Paramount	Lakewood
Cudahy	Pico Rivera	Whittier
Hawaiian Gardens	South Gate	
Huntington Park		
Lynwood		
Maywood		

The profiles of the three commercial groupings are shown in the table below. The percents listed are the percent of all commercial businesses (SIC codes 50 - 97) that fall within the general SIC categories listed.

Table 2-4

Commercial Grouping -- Percent of Businesses Listed

Group	Wholesale	Retail	Financial	Services
1	10.9%	41.7%	7.1%	39.9%
2	24.0%	30.3%	5.5%	37.5%
3	13.4%	36.3%	8.0%	42.4%

Most of the businesses in the Cities were either classified as retail or service. The Cities in Group 1 had slightly more retail businesses than services. Businesses classified as wholesale represented approximately 11% of all businesses in the Group 1 Cities.

The Group 3 cities had slightly more service establishments than retail. Wholesale businesses represented 13.4% of all businesses.

The percent of retail and service businesses for the Cities in Group 2 were both less than 40%. The percent of wholesale businesses was approximately twice as great as that for Groups 1 and 3.

The Cities in each of the commercial groups are as follows:

Group 1

Artesia
Bell
Bellflower
Bell Gardens
Compton
Cudahy
Hawaiian Gardens
Huntington Park
Lakewood
Lynwood
Maywood
South Gate

Group 2

Commerce
La Mirada
Paramount
Pico Rivera

Group 3

Cerritos
Whittier
Downey
Norwalk

The profiles of the two industrial groupings are shown in the table below. The businesses classified as industrial were those with SIC codes between 10 and 49.

Table 2-5
Industrial Groupings -- Percent of Businesses Listed

<u>Group</u>	<u>Mining</u>	<u>Construction</u>	<u>Mfg.</u>	<u>Trans/Utilities</u>
1	4.0%	43.9%	34.5%	16.6%
2	2.8%	16.1%	63.5%	17.6%

The percent of businesses classified as mining and transportation/utilities were approximately the same for the Cities in both Group 1 and Group 2. However, the Group 1 Cities had a more equal mix of construction and manufacturing businesses while the Group 2 Cities had significantly more manufacturing than construction businesses.

The Cities in each of the industrial groups are as follows:

Group 1

Artesia
Bell Gardens
Bellflower
Cerritos
Downey
Hawaiian Gardens
Huntington Park
Lakewood
Norwalk
Whittier

Group 2

Bell
Commerce
Compton
Cudahy
La Mirada
Lynwood
Maywood
Paramount
Pico Rivera
South Gate

2.2.4 Field Sampling and Sorting

A field sampling plan was designed for the residential and commercial groups. Discussions were held with the primary waste haulers servicing the cities to develop a rationale for the selection of loads to be sampled. The haulers were instructed to select loads that would be representative

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of accounts in the City. At least five loads from each of the groups were to be sampled (justification for number of loads follows). In some cases, as a result of information provided by the haulers, additional loads were sorted to ensure that all portions of the residential and commercial sectors were adequately sampled.

The sorting plan and schedule is included in Appendix B-4. This plan was reviewed with the staff of the CIWMB to ensure that the verification sampling plan would be adequate.

The number of loads, the total quantity of waste sorted, and the average weight of the samples sorted appear in Table 2-6.

Table 2-6
Waste Sorting Description by Groupings

Group	No. of Loads	Total Weight (lbs)	Average Sample Weight (lbs)
Residential Group 1	7	1,878	268
Residential Group 2	5	1,580	316
Residential Group 3	8	1,930	241
Commercial Group 1	9	2,532	281
Commercial Group 2	6	1,590	265
Commercial Group 3	7	1,904	272
Total	42	11,414	272

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The number of samples taken for each group was determined to be representative using the Klee and Carruth methodology. The results of the field sampling were used to identify the material that would determine the value for X to be used in the calculations. A comparison of the number of samples taken in the field, and the number required according to Klee and Carruth is shown in Table 2-7. The calculations using the Klee and Carruth methodology are shown in Appendix B-5.

Table 2-7
Analysis of Sampling Requirements

Group	No. of Field Samples	Samples Required*
Residential Group 1	7	4.5
Residential Group 2	5	5.3
Residential Group 3	8	5.2
Commercial Group 1	9	4.3
Commercial Group 2	6	5.4
Commercial Group 3	7	4.8
* Per Klee and Carruth Methodology		

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All field sampling was conducted at the Paramount Resource Recycling Facility (PRRF) in the City of Paramount. Private waste haulers operating in the cities in each group were contacted and requested to divert specified loads of waste to the PRRF for sorting. The haulers that participated in the sampling plan were:

Metropolitan Waste Disposal
Consolidated Waste Disposal
Cal San Disposal
Western Waste Industries
B.Z. Disposal
Klistoff & Sons Disposal

The sampling procedure was as follows:

When a truck designated for sampling entered the PRRF yard, the truck was weighed and then directed to the tipping area of the facility. The truck was unloaded in the tipping area and then re-routed to the scale before exiting the facility so that the net weight of the load could be determined.

After each load was deposited on the tipping floor, a front loader was used to mix the contents of the load. Next, a random sample of approximately 300 to 400 pounds of material from each load was moved to the sorting area. Two 3-person sorting crews were utilized to sort the loads. The sorting supervisor was responsible for instructing the sorters on the proper segregation of the material. Separate containers were utilized to sort the sampled material into 41 different waste types. Additional waste types sorted included rigid plastic containers, polystyrene, diapers, fines, yard prunings, and miscellaneous other wastes. As none of the cities are adjacent to any bodies of water, no marine wastes were discovered.

The sorting took place between February 8 and 19, 1991. The weather during this period was clear and dry.

2.2.5 Data Analysis

All field data was compiled and analyzed to calculate the total sample weight, the total amount of material of each type that was sorted, and the percent of the total material sorted represented by each type. The composition data resulting from the field sampling for the working group is summarized in Table 2-8 and Table 2-9 on the following pages. More detailed data sheets from the field sampling are included in Appendix B-6.

TABLE 2-8
RESIDENTIAL FIELD SAMPLING RESULTS

WASTE TYPE	AVERAGE % WEIGHT		
	Group 1	Group 2	Group 3
Corrugated Containers	4.00%	4.80%	5.80%
Mixed Paper	8.10%	11.40%	11.50%
Newspaper	6.20%	7.10%	9.90%
Ledger	0.30%	0.70%	0.40%
Other Paper	4.40%	3.30%	2.60%
TOTAL PAPER	23.00%	27.30%	30.20%
Containers	0.20%	0.20%	0.30%
PET containers	0.10%	0.30%	0.10%
HDPE containers	1.20%	0.60%	0.70%
Film plastics	2.80%	2.60%	2.70%
Polystyrene	0.80%	0.50%	0.70%
Other plastics	2.70%	2.00%	2.20%
TOTAL PLASTICS	7.80%	6.20%	6.70%
Refillable glass	0.00%	0.00%	0.00%
CA redemption glass	1.50%	2.20%	1.20%
Other recyclable glass	3.40%	3.90%	3.00%
Other non-recyclable glass	0.40%	0.30%	0.10%
TOTAL GLASS	5.30%	6.40%	4.30%
Aluminum cans	0.10%	0.10%	0.30%
Tin cans	2.10%	1.60%	2.20%
Ferrous metals	1.20%	0.30%	0.40%
Non-ferrous metals	0.30%	0.40%	0.20%
White goods	0.00%	0.00%	0.30%
Other metals	1.70%	0.80%	1.40%
TOTAL METALS	5.40%	3.20%	4.80%
Grass / leaves	6.90%	13.30%	13.70%
Prunings	9.80%	9.00%	7.40%
TOTAL YARD WASTE	16.70%	22.30%	21.10%
Food waste	16.50%	15.70%	16.50%
Wood waste	4.80%	2.00%	2.50%
Tires and rubber	1.50%	0.30%	2.00%
Manure	0.00%	0.00%	0.30%
Diapers	5.90%	4.10%	4.40%
Textiles and leather	5.60%	4.20%	3.00%
Other organics	1.10%	0.60%	2.10%
TOTAL OTHER ORGANICS	35.40%	26.90%	30.80%
Inert solids	4.40%	7.70%	1.90%
Hazardous waste	0.50%	0.10%	0.20%
Fines	1.40%	0.10%	0.00%
Miscellaneous	0.00%	0.00%	0.00%
TOTAL OTHER WASTES	6.30%	7.90%	2.10%
Ash	0.00%	0.00%	0.00%
Industrial sludge	0.00%	0.00%	0.00%
Sewage sludge	0.00%	0.00%	0.00%
Asbestos	0.00%	0.00%	0.00%
Auto shredder	0.00%	0.00%	0.00%
Auto bodies	0.00%	0.00%	0.00%
Other special waste	0.00%	0.00%	0.00%
TOTAL SPECIAL WASTE	0.00%	0.00%	0.00%

TABLE 2-9
COMMERCIAL FIELD SAMPLING RESULTS

WASTE TYPE	AVERAGE % WEIGHT		
	Group 1	Group 2	Group 3
Corrugated Containers	16.10%	20.50%	13.30%
Mixed Paper	7.30%	6.70%	6.70%
Newspaper	1.90%	3.90%	5.90%
Ledger	3.10%	2.00%	2.80%
Other Paper	2.30%	6.10%	1.90%
TOTAL PAPER	30.70%	39.20%	30.60%
Containers	0.00%	0.70%	0.20%
PET containers	0.00%	0.00%	0.10%
HDPE containers	0.50%	1.30%	0.30%
Film plastics	6.40%	3.50%	2.40%
Polystyrene	0.90%	1.60%	1.10%
Other plastics	3.30%	0.90%	3.30%
TOTAL PLASTICS	11.10%	8.00%	7.40%
Refillable glass	0.00%	0.00%	0.00%
CA redemption glass	0.40%	2.20%	0.50%
Other recyclable glass	0.40%	0.90%	0.50%
Other non-recyclable glass	1.80%	0.00%	0.10%
TOTAL GLASS	2.60%	3.10%	1.10%
Aluminum cans	0.10%	0.10%	0.20%
Tin cans	2.00%	1.00%	0.60%
Ferrous metals	2.80%	2.20%	1.40%
Non-ferrous metals	0.10%	0.20%	0.50%
White goods	0.00%	1.50%	0.00%
Other metals	2.30%	0.80%	6.00%
TOTAL METALS	7.30%	5.80%	8.70%
Grass / leaves	1.90%	2.70%	1.90%
Prunings	3.10%	2.40%	5.60%
TOTAL YARD WASTE	5.00%	5.10%	7.50%
Food waste	13.50%	22.40%	18.70%
Wood waste	12.30%	11.00%	7.10%
Tires and rubber	0.90%	0.00%	3.70%
Manure	0.00%	0.00%	0.20%
Diapers	0.80%	0.60%	0.80%
Textiles and leather	10.20%	1.00%	5.50%
Other organics	1.30%	2.10%	1.10%
TOTAL OTHER ORGANICS	39.00%	37.10%	37.10%
Inert solids	3.40%	1.70%	7.60%
Hazardous waste	0.20%	0.10%	0.00%
Fines	0.70%	0.10%	0.00%
Miscellaneous	0.00%	0.00%	0.00%
TOTAL OTHER WASTES	4.30%	1.90%	7.60%
Ash	0.00%	0.00%	0.00%
Industrial sludge	0.00%	0.00%	0.00%
Sewage sludge	0.00%	0.00%	0.00%
Asbestos	0.00%	0.00%	0.00%
Auto shredder	0.00%	0.00%	0.00%
Auto bodies	0.00%	0.00%	0.00%
Other special waste	0.00%	0.00%	0.00%
TOTAL SPECIAL WASTE	0.00%	0.00%	0.00%

Analysis of Variance. The analysis of variance (ANOVA) procedure is a two part statistical technique designed to test the assumption that the means of two or more populations are the same. For this waste composition study, the ANOVA procedure was used to test if the mean percent by weight of a particular type of waste (paper, plastic, etc.) in the City's waste stream was equal to that of another city. The data from the field sampling was compared to statistically representative sampling data from a city with similar characteristics.

Part one of the procedure is based on the assumption that the mean percent of a type of waste is the same for both the city and the comparable city (i.e. % of paper in working group city A's waste stream is equal to the % paper in comparable city X's waste stream). If this assumption is true, both samples can be said to have been taken from the same normally distributed population. To complete this part of the procedure, the common population mean was calculated and the variance of each sample mean from the working group city and the comparable city data about this mean were calculated. This between-group variability was used as an estimate of the common population variance.

The second part of the ANOVA procedure involved an estimate of the common population variance based on the variation of the sample means within the working group city data and within the comparable city data. Because of the difference in sample sizes a weighted average was used to determine this estimate.

The distribution of the estimates of a population variance follow an F probability distribution. The sampling distribution of the ratio of the between-means estimate and the within-means estimate of the population variance also follows an F distribution. This ratio was compared to a critical value taken from an F distribution table with a level of significance of .01 and specific degrees of freedom based on the number of samples taken for the working group city and the comparable city. If the ratio of the two estimates of the common population variance

was less than the critical value, then the hypothesis that the two means are equal could be said to be true.

The formulas used to calculate the between-means and within-means estimates of the population variance are shown in Appendix B-7.

Residential Data Analysis. Residential sampling data from the City of Santa Fe Springs was used to test the validity of the residential sampling data for the Residential Group 1 Cities. This data is shown in Appendix B-8. Santa Fe Springs was chosen because of the similarity of its residential profile to that of Residential Group 1. A comparison of these profiles is as follows:

Factor	Santa Fe Springs	Group 1
Average Per Capita Income	\$8,853	\$6,599
Single-Family Units	69.0%	57.7%
Multifamily units	29.0%	39.9%
Housing Density		
Units/Acre	3.46	3.73
Persons/Acre	9.30	12.60

An ANOVA procedure was performed on the sample data for Residential Group 1 and the City of Santa Fe Springs. The ratio of the two estimates of the common population variance and the critical value from the F distribution table that resulted from this comparison are as follows:

	Variance Ratio	Critical Value
Paper	5.003	8.86
Plastic	1.101	8.86
Glass	0.057	8.86
Metals	0.433	8.86
Yard Waste	0.795	8.86
Organics	8.144	8.86
Other Waste	0.326	8.86

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The critical value was based on a numerator degrees of freedom of 1 and a denominator degrees of freedom of 14. Given that the variance ratios for each category of material are less than the critical values it can be concluded that the sample means are equal and are from a common population. As a result, the field sampling data for Residential Group 1 was used to represent the composition of the waste disposed by the Group 1 cities.

Since the residential field sorting was directed at waste collected in front loader trucks, no bulky items or white goods were observed. However, information available from the local landfill operators and the refuse haulers, and observations of roll-offs of household demolition or clean-up projects brought into the facility where sorting was being conducted, indicated that white goods were part of the residential waste stream. Information obtained from the residential telephone surveys also indicated that people living in the working group cities do discard used appliances at their place of residence.

To approximate the percent of white goods in the residential waste stream, composition data obtained from a detailed composition study conducted at the South East Resource Recovery Facility (SERRF) was used. This facility is located in the City of Long Beach, which is contiguous to some of the jurisdictions in the working group, and receives some waste from cities in the working group.

The SERRF study analyzed the composition of 40 loads of residential waste. The average percent composition for white goods was .2%. This figure was used for all of the working group cities.

Commercial Data Analysis. The sampling results for Commercial Group 2 were compared to commercial sampling results for the City of Santa Fe Springs. This city was chosen because of the similarity of the profile of its commercial community to that of the cities in Commercial Group 2. A comparison of the commercial profiles is as follows:

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	Wholesale	Retail	Financial	Services
Commercial Group 2	24.0%	30.3%	8.0%	37.5%
Santa Fe Springs	25.2%	36.4%	5.5%	32.8%

The commercial profile of Santa Fe Springs met the general criteria for the inclusion of a city in Commercial Group 2.

An ANOVA procedure was performed on the sample data for Commercial Group 2 and the City of Santa Fe Springs. The ratio of the two estimates of the common population variance and the critical value from the F distribution table that resulted from this comparison are as follows:

Category	Variance Ratio	Critical Value
Paper	0.148	8.86
Plastic	2.117	8.86
Glass	0.017	8.86
Metals	0.735	8.86
Yard Waste	0.060	8.86
Organics	1.343	8.86
Other Wastes	0.727	8.86

The critical value was selected based on a numerator degrees of freedom of 1 and a denominator degrees of freedom of 32.

Since the ratio of the variances are less than the critical values, it can be concluded that the means are equal and are from a common population. Thus, the field sampling results for Commercial Group 2 were used to represent the composition of the commercial waste generated by the cities in Commercial Group 2.

Industrial Composition Data. Industrial waste composition data from the City of Santa Fe Springs was used to estimate the composition of the industrial waste stream of the Cities in Industrial Group 2. The profile of Industrial Group 2 and the City of Santa Fe Springs indicated that each included approximately the same percent of manufacturing and

construction businesses, and a relatively low number of businesses classified as either mining or transportation/utilities. A comparison of the profiles is as follows:

	Mining	Const.	Mfg.	Trans.
Group 2	2.8%	16.1%	63.5%	17.6%
Santa Fe Springs	1.2%	20.8%	70.9%	7.1%

2.2.6 Summary of Results

The waste composition data was combined with the data obtained from the waste haulers to obtain an overall waste disposal composition profile for the residential, commercial, and industrial generators in the City. In the City of Commerce it was also necessary to factor in the quantity of ash being produced through incineration at the Commerce Refuse-to-Energy Facility. Ash was estimated to be 30% of the weight of refuse being delivered to the facility. The composition of materials in the disposal wastestream was further adjusted to take into account the relative combustibility of each waste category. Metals, inerts, and glass were assumed to be less combustible than paper, plastic, and organics. The results are presented in Tables 2-10, 2-11, and 2-12.

TABLE 2-10

RESIDENTIAL WASTE DISPOSAL COMPOSITION - COMMERCE

WASTE TYPE	RESIDENTIAL WASTE AVERAGE ANNUAL TONS	AVERAGE % WT
Corrugated Containers	209.79	3.08%
Mixed Paper	422.53	6.20%
Newspaper	320.31	4.70%
Ledger	15.59	0.23%
Other Paper	226.26	3.32%
TOTAL PAPER	1,194.48	18%
Containers	104.90	1.54%
PET containers	5.24	0.08%
HDPE containers	63.08	0.93%
Film plastics	143.12	2.10%
Polystyrene	41.96	0.62%
Other plastics	136.30	2.00%
TOTAL PLASTICS	494.59	7%
Refillable glass	0.00	0.00%
CA redemption glass	99.50	1.46%
Other recyclable glass	225.07	3.30%
Other non-recyclable glass	26.58	0.39%
TOTAL GLASS	351.15	5%
Aluminum cans	6.37	0.09%
Tin cans	138.92	2.04%
Ferrous metals	86.25	1.27%
Non-ferrous metals	19.86	0.29%
White goods	13.24	0.19%
Other metals	112.54	1.65%
TOTAL METALS	377.17	6%
Grass / leaves	361.89	5.31%
Prunings	513.99	7.54%
TOTAL YARD WASTE	875.89	13%
Food waste	865.40	12.70%
Wood waste	251.75	3.69%
Tires and rubber	78.67	1.15%
Manure	0.00	0.00%
Diapers	309.44	4.54%
Textiles and leather	288.47	4.23%
Other organics	57.41	0.84%
TOTAL OTHER ORGANICS	1,851.14	27%
Inert solids	291.30	4.27%
Hazardous waste	25.22	0.37%
Fines	92.85	1.36%
Miscellaneous	0.00	0.00%
TOTAL OTHER WASTES	409.36	6%
Ash	1,261.46	18.51%
Industrial sludge	0.00	0.00%
Sewage sludge	0.00	0.00%
Asbestos	0.00	0.00%
Auto shredder	0.00	0.00%
Auto bodies	0.00	0.00%
Other special waste	0.00	0.00%
TOTAL SPECIAL WASTE	1,261.46	19%
TOTAL ALL WASTE	6,815	100.00%

TABLE 2-11

COMMERCIAL WASTE DISPOSAL COMPOSITION - COMMERCE

WASTE TYPE	COMMERCIAL WASTE AVERAGE ANNUAL TONS	AVERAGE % WT
Corrugated Containers	5,033.32	15.47%
Mixed Paper	1,625.72	5.00%
Newspaper	976.08	3.00%
Ledger	488.04	1.50%
Other Paper	1,512.92	4.65%
TOTAL PAPER	9,636.08	30%
Containers	195.22	0.60%
PET containers	0.00	0.00%
HDPE containers	325.36	1.00%
Film plastics	878.47	2.70%
Polystyrene	488.04	1.50%
Other plastics	227.75	0.70%
TOTAL PLASTICS	2,114.84	7%
Refillable glass	0.00	0.00%
CA redemption glass	683.26	2.10%
Other recyclable glass	276.56	0.85%
Other non-recyclable glass	0.00	0.00%
TOTAL GLASS	959.81	3%
Aluminum cans	32.54	0.10%
Tin cans	292.82	0.90%
Ferrous metals	715.79	2.20%
Non-ferrous metals	65.07	0.20%
White goods	473.06	1.45%
Other metals	260.29	0.80%
TOTAL METALS	1,839.57	6%
Grass / leaves	655.14	2.01%
Prunings	780.86	2.40%
TOTAL YARD WASTE	1,436.00	4%
Food waste	5,466.05	16.80%
Wood waste	2,700.49	8.30%
Tires and rubber	0.00	0.00%
Manure	0.00	0.00%
Diapers	145.59	0.45%
Textiles and leather	260.29	0.80%
Other organics	520.58	1.60%
TOTAL OTHER ORGANICS	9,092.99	28%
Inert solids	569.38	1.75%
Hazardous waste	0.00	0.00%
Fines	0.00	0.00%
Miscellaneous	0.00	0.00%
TOTAL OTHER WASTES	569.38	2%
Ash	6,887.40	21.17%
Industrial sludge	0.00	0.00%
Sewage sludge	0.00	0.00%
Asbestos	0.00	0.00%
Auto shredder	0.00	0.00%
Auto bodies	0.00	0.00%
Other special waste	0.00	0.00%
TOTAL SPECIAL WASTE	6,887.40	21%
TOTAL ALL WASTE	32,536	100.00%

TABLE 2-12

INDUSTRIAL WASTE DISPOSAL COMPOSITION - COMMERCE

WASTE TYPE	INDUSTRIAL WASTE AVERAGE ANNUAL TONS	AVERAGE % WT
Corrugated Containers	2,927.70	9.00%
Mixed Paper	2,407.22	7.40%
Newspaper	244.76	0.75%
Ledger	244.76	0.75%
Other Paper	845.78	2.60%
TOTAL PAPER	6,670.21	21%
Containers	260.24	0.80%
PET containers	65.06	0.20%
HDPE containers	81.33	0.25%
Film plastics	1,040.96	3.20%
Polystyrene	146.39	0.45%
Other plastics	1,724.09	5.30%
TOTAL PLASTICS	3,318.06	10%
Refillable glass	0.00	0.00%
CA redemption glass	195.18	0.60%
Other recyclable glass	195.18	0.60%
Other non-recyclable glass	618.07	1.90%
TOTAL GLASS	1,008.43	3%
Aluminum cans	0.00	0.00%
Tin cans	97.59	0.30%
Ferrous metals	1,463.85	4.50%
Non-ferrous metals	474.94	1.46%
White goods	748.19	2.30%
Other metals	97.59	0.30%
TOTAL METALS	2,882.16	9%
Grass / leaves	622.09	1.91%
Prunings	309.04	0.95%
TOTAL YARD WASTE	931.12	3%
Food waste	730.87	2.25%
Wood waste	3,610.83	11.10%
Tires and rubber	1,658.90	5.10%
Manure	0.00	0.00%
Diapers	0.00	0.00%
Textiles and leather	1,349.56	4.15%
Other organics	276.51	0.85%
TOTAL OTHER ORGANICS	7,626.66	23%
Inert solids	1,284.94	3.95%
Hazardous waste	32.53	0.10%
Fines	95.96	0.30%
Miscellaneous	520.48	1.60%
TOTAL OTHER WASTES	1,933.91	6%
Ash	8,159.40	25.08%
Industrial sludge	0.00	0.00%
Sewage sludge	0.00	0.00%
Asbestos	0.00	0.00%
Auto shredder	0.00	0.00%
Auto bodies	0.00	0.00%
Other special waste	0.00	0.00%
TOTAL SPECIAL WASTE	8,159.40	25%
TOTAL ALL WASTE	32,530	100.00%

2.3 SOLID WASTE DIVERSION STUDY

A solid waste diversion study was conducted for the City of Commerce to characterize the quantity and types of waste that are currently being diverted from disposal by generators within the jurisdiction. Because existing waste diversion counts toward the AB 939 landfill diversion mandates of 25% by 1995, and 50% by 2000, the documentation of existing diversion levels is extremely important in determining how much diversion must be achieved through new programs approved in the SRRE. Green wastes and wood wastes used in waste transformation facilities were listed separately in this study since waste transformation can only be used for up to a 10% credit toward the 50% diversion mandate for the year 2000.

2.3.1 Solid Waste Diversion Methodology

The waste diversion study was designed to target the three main sources of waste generation within the City: residential, commercial, and industrial. The method used to quantify existing diversion from these sources involved identifying all existing source reduction, recycling, and composting programs in the City and surrounding area. Once the existing diversion programs had been identified, separate survey forms were developed for each type of program to collect written data about waste quantities and types being diverted. Surveys also asked for information about generation source, and, to avoid double-counting materials, the purchasers of materials. These surveys were mailed to all program operators in the City and the surrounding area. Phone surveys were also conducted to collect diversion data, and to verify and confirm written responses. All surveys were conducted on a confidential basis to encourage participation in the survey. A comprehensive list which was used to identify existing programs in the City is listed below. Only a select number of these programs were found in the City and are listed in Table 2-14 in Section 2.3.2.

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- City curbside collection programs
- City hall recycling programs
- commercial recyclers
- California certified redemption centers
- scrap metal dealers
- paper brokers and packers
- waste haulers
- transfer stations
- landfills
- tire recyclers
- wood and green waste processors
- landscaping and tree service companies
- City public works departments (street tree, median and park landscape maintenance, street maintenance)
- garden clubs
- major shopping centers and malls, grocery chains, and major retailers
- schools, colleges, and universities
- newspaper publishers
- diaper service
- nonprofits

Allocation of Data. Many recycling and composting facilities in the City and surrounding area recover materials from other cities as well. To comply with AB 939, only those materials generated in Commerce were counted towards the City's diversion mandates.

Each recycling or composting facility contacted was asked to quantify, by waste type, those materials diverted by the City based on existing records and accounts. However, some recycling and composting facilities were unable to provide such information due to a lack of accurate records. In these cases, recycling and composting facility managers were interviewed to determine the city of origin of their customers. If customers from Commerce patronized the facility, the facility manager was asked to estimate the percentage of total business

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from the City. If the facility manager was unable to make a percentage estimate, data provided by the facility was allocated according to the population of cities within a radius defined by the facility manager. If the manager could not define a radius of business, then data was allocated according to population for all cities within a two-mile radius of the facility. A two-mile radius was selected as this turned out to be the average distance customers traveled in this area according to facility managers providing such information. Below is an equation expressing the final step of the methodology described above, and a sample calculation.

$$\text{Diversion for City} = \frac{(\text{Total Tons Diverted at Recycling Facility}) \times (\text{Population of City as a percent of total population of cities within a two mile radius of facility})}{1}$$

If the total tonnage being diverted equals 100 tons and the city has 25% of the total population of those cities within a two mile radius of the facility then,

$$(100 \text{ tons}) \times (25\%) = 25 \text{ tons}$$

On two occasions, customer surveys were conducted to exactly determine the generation source of the material being diverted. Both surveys were conducted over two-week time periods. The first such survey was conducted by the Los Angeles County Sanitation Districts at their Puente Hills recycling center in Whittier. For two weeks in January, each customer was asked to state their city of origin. Out of a total of 280 customers surveyed, a percentage was figured for each city from which residents were coming. This percentage was then applied to the total tonnage received at the facility throughout the year. The number of customers that recycled at the center from Cities in the working group appears in Appendix B-9.

A second survey was conducted by United Pacific Corporation, a large green waste processor also located in the south east area. During one week in both February and March, each vehicle utilizing the facility was

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weighed and asked to state the city of origin of their load. A percentage of the total waste entering the facility was figured for each city using the facility. Applying this percentage to the total annual tonnage received at the facility results in the total attributed to the City. The tonnage received at the facility during the survey period from participating cities appears in Appendix B-9.

Household Source Reduction Survey. In addition, a source reduction survey of households in the working group was also conducted. A copy of the survey form appears in Appendix B-10. For the purposes of this survey, all the participating Cities and the County unincorporated area were treated as a single group. The results of this survey were used to determine the amount of backyard composting, appliance repair, and household item donations taking place in the residential sector.

Residential telephone numbers in the south east area were randomly selected from Pacific Bell Directories covering the territory. A random numbers table (Beyer 1984) was first used to select specific page numbers from the directories, and then to select a telephone number from the selected page. As expected, several households from each City in the working group were selected to participate in the survey.

These randomly selected telephone numbers were called until a representative number of the total population of households were contacted. Spanish-speaking households contacted were surveyed by a bi-lingual staff member. Out of 400 telephone numbers initially selected, 271 resulted in completed surveys. A statistical analysis was performed based on the binomial distribution of the responses in these 271 surveys to determine if the relative precision of the preliminary results was within 10% of the average value obtained. This analysis was conducted based on a 90% confidence level. This analysis concluded that 271 surveys are a representative sample of the area. These statistical calculations are contained in Appendix B-11.

2.3.2 Survey Results

The responses to the surveys were tabulated and analyzed to evaluate the type and quantity of waste being diverted from each of the three waste generation sources. The results are discussed below.

Recycling and Composting Surveys. In the City of Commerce, 40 local businesses responded to the written and verbal requests for recycling and composting data. These included commercial recyclers, California-certified recycling centers, green waste processors, paper brokers, tire recyclers, scrap metal dealers, transfer stations, municipal departments, concrete and asphalt processors, waste haulers, grocery stores and major retailers, and private businesses. Certified Redemption Centers and commercial recyclers responding to the survey are listed in Appendix B-12. This amounted in a total of 20,639 tons of material being diverted annually through recycling and composting activities (Note: source reduction must be added to this total for total diversion). In addition, surveys and interviews showed that 1,802 tons were being transformed through incineration at permitted biomass facilities located outside of the City of Commerce.

Tables 2-13, and 2-14 present the results of the solid waste recycling and composting diversion study. Table 2-13 presents the existing quantities of materials recycled and composted per year by generation source--residential, commercial, and industrial. Table 2-14 presents the existing quantities of materials recycled and composted by program and business type.

TABLE 2-13

**CITY OF COMMERCE
RECYCLING AND COMPOSTING DIVERSION DATA**

Summary by Type of Material and Generation Source

MATERIAL TYPE	TOTAL (TPY)	GENERATION SOURCE		
		R	C	I
Aluminum Cans	204	144.3	24.1	35.8
CA Redemption Glass	554	501.8	42.1	10.1
Ferrous Metals	3,884	3.1	69.9	3810.5
Food Waste	60	0	60	0
Other Glass Containers	250	73.6	6.4	169.5
HDPE	72	12.3	0	60
Inert-Processors	4,833	0	0	4833
Ledger Paper	527	0	485.1	42
Other Metals	123	0	46.7	76.7
Mixed Paper	1,239	435	435.7	368.4
Newspaper	670	514.5	155.6	0
Non-Ferrous Metals	291	0	76.2	214.7
Old Corrugated Cardboard	6,332	0	5211.3	1121
PET	18	17.8	0.1	0
Other Paper	241	168	72.8	0
Tires	57	23	23	11
Wood Waste	1,100	0	283.3	816.6
Yard Waste	184	184	0	0
TOTAL	20,639	2,077	6,992	11,569

INCINERATED MATERIAL*	TOTAL (TPY)	GENERATION SOURCE		
		R	C	I
Wood Waste	1,444	0	1,035	409
Yard Waste	358	46	312	0
	1,802	46	1,347	409

*Incinerated at biomass facility outside of Commerce

TOTAL MATERIAL	TOTAL (TPY)	GENERATION SOURCE		
		R	C	I
	22,441	2,123	8,340	11,979

TABLE 2-14

**CITY OF COMMERCE
RECYCLING AND COMPOSTING DIVERSION DATA**

Summary by Type of Program or Business

PROGRAM OR BUSINESS TYPE	TOTAL DIVERSION (tons per year)
Certified Redemption Centers	3,721
Commercial Recyclers	5,273
Scrap Metal Dealers	367
Paper Brokers	169
Private Business	1,680
Tire Recycling	57
Grocery/Major Retailer	141
Curbside Collection Program	65
Concrete/Ashpalt	4,833
Transfer Station	236
Tree Service	184
Waste Hauler	3,913
TOTAL	20,639

MATERIAL INCINERATED*	TOTAL DIVERSION (tons per year)
Tree Service	46
City Parks	312
Waste Hauler	1,077
Private Business	312
Transfer Station	55
TOTAL	1,802

*Incinerated at biomass facility outside of Commerce

TOTAL MATERIAL **22,441 Tons/Year**

Source Reduction Survey. Source reduction diversion activities were quantified from the residential sector of the City. The first source of source reduction information was Dy-Dee Diaper, a local cloth diaper delivery service. According to Dy-Dee Diaper, they supply an average of 80 cloth diapers per account per week. Using a one-to-one replacement ratio, it was assumed that this amounted to a source reduction of 80 disposable diapers per account per week. Based on field samples conducted during the waste composition study at PRRF for the City, the weight of a discarded disposable diaper was .38 lbs. each (554 disposable diapers weighed 208.35 lbs.). Therefore, Dy-Dee Diapers' 15 accounts in the City amounted to a source reduction total of 12 tons per year. A sample calculation is shown below.

$$\text{Total Annual Diversion} = (80 \text{ diapers per week}) \times (.38 \text{ lbs. per diaper}) \times (52 \text{ weeks}) \times (\# \text{ of accounts}) / 2000 \text{ lbs.}$$

The second major source of source reduction diversion data was those activities quantified through the random telephone survey of households in the working group. Out of 271 surveys completed, the following average values for source reduction participation were obtained.

<u>Diversion Activity</u>	<u>Percent Participation</u>
Backyard Composting (yard wastes)	11.4%
Appliance Repair (white goods)	
TVs	01.5%
Washers/Dryers	00.7%
Refrigerators	00.4%
Dishwashers	00.4%
Household Item Donation (clothing, books, furniture, cookware)	67.5%

The following sections describe the methodology, for each of these activities, used to estimate the quantity of source reduced solid waste.

Backyard Composting. The household survey indicated that 31 out of the 271 households surveyed backyard composted, or composted at-the-source. This includes leaving grass clippings on the lawn, bin composting, and piling yard waste in a corner of the yard to decompose naturally. The percent participation (11.4%) was then multiplied by the number of single-family residential units in each City to obtain the number of participating residential units per City.

An average weight of 50 pounds per household per month was used as the average weight of material backyard composted per participating single-family household. This resulted in a total of 72 tons per year for the City of Commerce. A sample calculation is shown below.

Total annual diversion = (11.4% of SF households backyard composted last year) x (#SF households in city) x (600 lbs. per year) / 2000 lbs.

A figure of 50 pounds. per household per month was used as the average weight of material backyard composted per participating single-family household. Two calculations went into determining this weight. First, all the responses from the household survey were averaged. Second, comparative data from existing green waste collection programs in the survey area was used to verify the survey average (Downey and Cerritos).

Appliance Repair. From the household survey, the number, types, and age of major appliances that broke down during the preceding twelve month period was determined. Additionally, the action taken by the household relative to these appliances was determined; that is, whether it was repaired, sold, disposed, or removed by an appliance supply company. Tabulation of the positive survey results included only those appliances that were repaired, or sold, that exceeded the average life expectancy for that type of appliance as stated by the manufacturer. The quantity of source reduced white goods was determined by

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multiplying the percent participation for each appliance type by the number of households in each City multiplied by the average weight of that appliance type. Washers, dryers, and dishwashers were multiplied only by the number of single-family households based on the assumption that multifamily units in the area typically do not contain these items. This amounted to a total of 5 tons per year for the City of Commerce.

The conversion factors listed below were used to estimate the amount of diverted material.

<u>Material Type</u>	<u>Weight and Average Life Expectancy</u>
TVs	45 lbs. each, avg. life expectancy 8 years (1)
Washers	200 lbs. each, avg. life expectancy 16 yrs. (2)
Dryers	200 lbs. each, avg. life expectancy 13 yrs. (2)
Refrigerators	275 lbs. each, avg. life expectancy 17 yrs. (3)
Dishwashers	100 lbs. each, avg. life expectancy 10 yrs. (4)

(1) Wilshire TV & Video Center

(2) Whirlpool and GE

(3) Sony

(4) Circuit City

A sample calculation for television sets follows:

Total annual diversion = (1.5% of respondents donated a television in last year >8 years old) x (# of households) x (45 lbs. each T.V.) / 2000 lbs.

Household Item Donation. The household survey indicated that 183 households, or 67.5% of those households surveyed, donated household items -- clothing, furniture, books, or cookware -- to a charitable organization during the preceding twelve months that they would have otherwise disposed. Respondents were also asked to estimate the total weight of items donated during the same time period. Based on survey responses, the average weight was determined to be 50 pounds. per household per year. The number of participating households was multiplied by the average weight to determine the total

FINAL DRAFT

diversion of household donations for each City. This amounted to a total of 56 tons per year for the City of Commerce. A sample calculation is shown below.

Total annual diversion = (67.5% of households donated items in last year) x (# of households) x (50 lbs. per year) / 2000 lbs.

Table 2-15 presents the existing quantities of solid waste by weight, generation source, and program, that are source reduced.

Table 2-15
Source Reduction Diversion Totals

Program	Total Diversion (TPY)	Diversion Percentage
Cloth Diaper Service	12	—
Backyard Composting	72	—
Appliance Repair	5	—
Household Item Donation	56	—
Total	145	.12%

2.4 FUTURE DATA COLLECTION

The City will study various methods to be used in the future for gathering data on quantities and composition of solid waste generated, diverted, and disposed, including when and from whom reports will be collected as required by CCR Section 18722 (o). A system will be selected and implemented in the next year and will be utilized to update the solid waste generation study in subsequent years. The City is presently

discussing reporting options with local waste haulers, solid waste facility operators, recycling facilities, recycling programs, and source reduction programs to determine what system will work best in the future.

2.5 SOLID WASTE GENERATION DATA

As required by CCR Section 18722 (i), the volume of solid wastes generated -- namely all waste disposed, recycled, composted, source reduced, and transformed -- are identified in Tables 2-16, 2-17, and 2-18 by weight, and by waste category and waste type from the residential, commercial, and industrial sources of generation.

TABLE 2-16

RESIDENTIAL WASTE GENERATION - COMMERCE

WASTE TYPE	RESIDENTIAL WASTE AVERAGE ANNUAL TONS	AVERAGE % WT
Corrugated Containers	209.79	2.32%
Mixed Paper	863.13	9.55%
Newspaper	834.81	9.24%
Ledger	15.59	0.17%
Other Paper	394.26	4.36%
TOTAL PAPER	2,317.58	26%
Containers	104.90	1.16%
PET containers	23.04	0.25%
HDPE containers	75.38	0.83%
Film plastics	143.12	1.58%
Polystyrene	41.96	0.46%
Other plastics	136.30	1.51%
TOTAL PLASTICS	524.70	6%
Refillable glass	0.00	0.00%
CA redemption glass	601.30	6.65%
Other recyclable glass	298.67	3.30%
Other non-recyclable glass	32.18	0.36%
TOTAL GLASS	932.15	10%
Aluminum cans	150.67	1.67%
Tin cans	138.92	1.54%
Ferrous metals	111.75	1.24%
Non-ferrous metals	19.86	0.22%
White goods	18.24	0.20%
Other metals	112.54	1.25%
TOTAL METALS	551.98	6%
Grass / leaves	489.89	5.42%
Prunings	641.99	7.10%
TOTAL YARD WASTE	1,131.88	13%
Food waste	865.40	9.58%
Wood waste	262.95	2.91%
Tires and rubber	101.67	1.12%
Manure	0.00	0.00%
Diapers	321.44	3.56%
Textiles and leather	299.67	3.32%
Other organics	57.41	0.64%
TOTAL OTHER ORGANICS	1,908.54	21%
Inert solids	291.30	3.22%
Hazardous waste	25.22	0.28%
Fines	92.85	1.03%
Miscellaneous	0.00	0.00%
TOTAL OTHER WASTES	409.37	5%
Ash	1,261.46	13.96%
Industrial sludge	0.00	0.00%
Sewage sludge	0.00	0.00%
Asbestos	0.00	0.00%
Auto shredder	0.00	0.00%
Auto bodies	0.00	0.00%
Other special waste	0.00	0.00%
TOTAL SPECIAL WASTE	1,261.46	14%
TOTAL ALL WASTE	9,038	100%

TABLE 2-17

COMMERCIAL WASTE GENERATION - COMMERCE

WASTE TYPE	COMMERCIAL WASTE AVERAGE ANNUAL TONS	AVERAGE % WT
Corrugated Containers	10,244.62	25.92%
Mixed Paper	2,061.42	5.22%
Newspaper	1,131.68	2.86%
Ledger	973.14	2.46%
Other Paper	1,585.72	4.01%
TOTAL PAPER	15,996.58	40%
Containers	195.22	0.49%
PET containers	0.10	0.00%
HDPE containers	325.36	0.82%
Film plastics	878.47	2.22%
Polystyrene	488.04	1.23%
Other plastics	227.75	0.58%
TOTAL PLASTICS	2,114.94	5%
Refillable glass	0.00	0.00%
CA redemption glass	725.36	1.84%
Other recyclable glass	282.96	0.72%
Other non-recyclable glass	0.00	0.00%
TOTAL GLASS	1,008.32	3%
Aluminum cans	56.64	0.14%
Tin cans	292.82	0.74%
Ferrous metals	785.69	1.99%
Non-ferrous metals	141.27	0.36%
White goods	473.06	1.20%
Other metals	306.99	0.78%
TOTAL METALS	2,056.47	5%
Grass / leaves	655.14	1.66%
Prunings	780.86	1.98%
TOTAL YARD WASTE	1,436.00	4%
Food waste	5,526.05	13.98%
Wood waste	2,983.79	7.55%
Tires and rubber	23.00	0.06%
Manure	0.00	0.00%
Diapers	145.59	0.37%
Textiles and leather	260.29	0.66%
Other organics	520.58	1.32%
TOTAL OTHER ORGANICS	9,459.30	24%
Inert solids	569.38	1.44%
Hazardous waste	0.00	0.00%
Fines	0.00	0.00%
Miscellaneous	0.00	0.00%
TOTAL OTHER WASTES	569.38	1%
Ash	6,887.40	17.42%
Industrial sludge	0.00	0.00%
Sewage sludge	0.00	0.00%
Asbestos	0.00	0.00%
Auto shredder	0.00	0.00%
Auto bodies	0.00	0.00%
Other special waste	0.00	0.00%
TOTAL SPECIAL WASTE	6,887.40	17%
TOTAL ALL WASTE	39,528	100%

TABLE 2-18
INDUSTRIAL WASTE GENERATION - COMMERCE

WASTE TYPE	INDUSTRIAL WASTE AVERAGE ANNUAL TONS	AVERAGE % WT
Corrugated Containers	4,048.70	9.18%
Mixed Paper	2,775.62	6.29%
Newspaper	244.76	0.56%
Ledger	286.76	0.65%
Other Paper	845.78	1.92%
TOTAL PAPER	8,201.62	19%
Containers	260.24	0.59%
PET containers	65.06	0.15%
HDPE containers	141.33	0.32%
Film plastics	1,040.96	2.36%
Polystyrene	146.39	0.33%
Other plastics	1,724.09	3.91%
TOTAL PLASTICS	3,378.07	8%
Refillable glass	0.00	0.00%
CA redemption glass	205.28	0.47%
Other recyclable glass	364.68	0.83%
Other non-recyclable glass	618.07	1.40%
TOTAL GLASS	1,188.03	3%
Aluminum cans	35.80	0.08%
Tin cans	97.59	0.22%
Ferrous metals	5,274.35	11.96%
Non-ferrous metals	689.64	1.56%
White goods	748.19	1.70%
Other metals	174.29	0.40%
TOTAL METALS	7,019.86	16%
Grass / leaves	622.09	1.41%
Prunings	309.04	0.70%
TOTAL YARD WASTE	931.13	2%
Food waste	730.87	1.66%
Wood waste	4,427.43	10.04%
Tires and rubber	1,669.90	3.79%
Manure	0.00	0.00%
Diapers	0.00	0.00%
Textiles and leather	1,349.56	3.06%
Other organics	276.51	0.63%
TOTAL OTHER ORGANICS	8,454.27	19%
Inert solids	6,117.94	13.87%
Hazardous waste	32.53	0.07%
Fines	95.96	0.22%
Miscellaneous	520.48	1.18%
TOTAL OTHER WASTES	6,766.91	15%
Ash	8,159.40	18.50%
Industrial sludge	0.00	0.00%
Sewage sludge	0.00	0.00%
Asbestos	0.00	0.00%
Auto shredder	0.00	0.00%
Auto bodies	0.00	0.00%
Other special waste	0.00	0.00%
TOTAL SPECIAL WASTE	8,159.40	19%
TOTAL ALL WASTE	44,099	100%

2.6 SOLID WASTE GENERATION DATA PROJECTIONS

As required by Section 18722(c) of the regulations, a 15-year projection was made for the solid waste expected to be disposed and diverted by the City. These projections were made based on two scenarios: 1) assumes that no increase in the waste diversion occurs, and 2) assumes that the waste diversion programs outlined in the SRR element are implemented and the statutory diversion goals are achieved. These projections were developed based on the following published data:

- California Department of Finance, Los Angeles County Population and Housing Estimates, January 1, 1990
- Southern California Association of Governments (SCAG), Small Area Forecasting Data, 1990

This published data was supplemented by City-specific data developed as part of the solid waste generation study:

- Current per capita waste generation rate (0.84 per resident per year) for residential waste
- Current per capita waste generation rate (0.59 per resident per year) for commercial waste

The industrial waste stream was assumed to remain constant throughout the 15-year period since increases in the local population were estimated to result in little change in industrial waste generation.

These waste generation projections are included at the end of Section 2.

2.7 MATERIALS TARGETED FOR DIVERSION

The following categories of materials are currently being disposed and are targeted for potential diversion through the programs identified in Sections 3 through 6 of this SRR element. The specific waste types

within these categories are discussed in each of the program components.

Materials to be diverted through source reduction:

- yard waste: grass, leaves, and prunings
- other organics: food waste and wood waste
- paper: OCC, mixed paper, and other paper
- plastic: film, other, HDPE, and PET

Materials to be diverted through recycling:

- paper: newspaper, mixed paper, and OCC
- plastics: HDPE and PET
- glass: all types
- yard wastes
- metals: tin cans and aluminum

Materials to be diverted through composting:

- yard wastes
- other organics: wood wastes

2.8 MATERIALS FOR DISPOSAL

The following categories of materials are currently being disposed but cannot be diverted from disposal by the programs discussed in Sections 3 through 6 because 1) they are currently nonrecyclable or cannot be reduced through source reduction efforts, 2) the quantity being disposed is very small, or 3) there is currently no market for the material and future markets are uncertain:

- plastics: other plastics, composite plastics
- glass: other nonrecyclable glass
- metals: other metals

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- other organics: textiles, leather, and other miscellaneous organics

15 YEAR WASTE GENERATION PROJECTIONS

- Commerce

With SRRE Implementation

WASTE TYPE	2005					2006			
	Disposal	Diversion	Generation	Percent		Disposal	Diversion	Generation	Percent
Paper									
Corrugated Containers	5,774	9,882	15,657	63.1%		5,809	9,930	15,738	63.1%
Mixed Paper	3,265	2,895	6,160	47.0%		3,284	2,908	6,193	47.0%
Newspaper	617	1,771	2,388	74.2%		621	1,779	2,400	74.1%
Ledger	534	843	1,377	61.2%		537	847	1,384	61.2%
Other Paper	2,797	259	3,055	8.5%		2,812	260	3,072	8.5%
Subtotal	12,987	15,649	28,636	54.6%		13,064	15,724	28,788	54.6%
Plastic									
Containers	577	31	608	5.1%		580	31	611	5.1%
PET containers	8	19	27	71.2%		8	19	27	71.2%
HDPE containers	213	370	583	63.4%		215	372	587	63.4%
Film plastics	2,236	0	2,236	0.0%		2,248	0	2,248	0.0%
Polystyrene	732	0	732	0.0%		736	0	736	0.0%
Other plastics	2,259	0	2,259	0.0%		2,272	0	2,272	0.0%
Subtotal	6,025	420	6,445	6.5%		6,059	422	6,481	6.5%
Glass									
Refillable glass	0	0	0	0.0%		0	0	0	0.0%
CA redemption glass	709	946	1,655	57.2%		713	950	1,664	57.1%
Other recyclable glass	240	807	1,047	77.1%		242	811	1,053	77.0%
Other non-recyclable glass	693	6	700	0.9%		697	6	704	0.9%
Subtotal	1,643	1,759	3,402	51.7%		1,652	1,768	3,420	51.7%
Metals									
Aluminum cans	34	263	297	88.6%		34	265	299	88.6%
Tin cans	229	340	569	59.8%		230	342	572	59.8%
Ferrous metals	2,380	4,273	6,653	64.2%		2,393	4,294	6,687	64.2%
Non-ferrous metals	623	313	936	33.5%		627	315	941	33.4%
White goods	715	654	1,369	47.8%		719	657	1,376	47.7%
Other metals	506	133	639	20.8%		509	133	642	20.7%
Subtotal	4,487	5,976	10,463	57.1%		4,513	6,005	10,517	57.1%
Yard Waste	3,073	715	3,788	18.9%		3,090	719	3,809	18.9%
Organics									
Food waste	7,650	64	7,714	0.8%		7,692	64	7,756	0.8%
Wood waste	6,816	1,490	8,306	17.9%		6,854	1,498	8,352	17.9%
Tires and rubber	1,694	244	1,938	12.6%		1,704	245	1,949	12.6%
Diapers	491	13	504	2.5%		493	13	506	2.5%
Textiles and leather	2,056	12	2,068	0.6%		2,068	12	2,080	0.6%
Other organics	935	0	935	0.0%		940	0	940	0.0%
Subtotal	19,642	1,823	21,465	8.5%		19,751	1,832	21,583	8.5%
Other Wastes									
Inert solids	1,081	6,452	7,533	85.6%		1,088	6,483	7,571	85.6%
Hazardous waste	62	0	62	0.0%		63	0	63	0.0%
Miscellaneous	779	0	779	0.0%		783	0	783	0.0%
Subtotal	1,923	6,452	8,374	77.0%		1,934	6,483	8,417	77.0%
Special Wastes									
Ash	61	17,607	17,667	99.7%		74	17,691	17,765	99.6%
Sewage sludge	0	0	0	0.0%		0	0	0	0.0%
Asbestos	0	0	0	0.0%		0	0	0	0.0%
Auto shredder	0	0	0	0.0%		0	0	0	0.0%
Auto bodies	0	0	0	0.0%		0	0	0	0.0%
Other special waste	0	0	0	0.0%		0	0	0	0.0%
Subtotal	61	17,607	17,667	99.7%		74	17,691	17,765	99.6%
Total Waste	49,839	50,401	100,240	50.3%		50,137	50,643	100,780	50.3%

An additional 10% diversion credit should be added to total diversion percentage after January 1, 1995 as a result of transformation occurring at the CREF.

15 YEAR WASTE GENERATION PROJECTIONS

- Commerce
With SRRE Implementation

WASTE TYPE	2001				2002			
	Disposal	Diversion	Generation	Percent	Disposal	Diversion	Generation	Percent
Paper								
Corrugated Containers	5,641	9,695	15,336	63.2%	5,674	9,741	15,415	63.2%
Mixed Paper	3,190	2,840	6,030	47.1%	3,208	2,853	6,062	47.1%
Newspaper	601	1,737	2,338	74.3%	605	1,745	2,350	74.3%
Ledger	522	827	1,349	61.3%	525	831	1,356	61.3%
Other Paper	2,736	254	2,990	8.5%	2,751	255	3,006	8.5%
Subtotal	12,690	15,352	28,041	54.7%	12,763	15,425	28,188	54.7%
Plastic								
Containers	564	30	594	5.1%	567	30	598	5.1%
PET containers	8	19	27	71.2%	8	19	27	71.2%
HDPE containers	208	363	571	63.6%	209	365	574	63.5%
Film plastics	2,187	0	2,187	0.0%	2,199	0	2,199	0.0%
Polystyrene	716	0	716	0.0%	720	0	720	0.0%
Other plastics	2,210	0	2,210	0.0%	2,222	0	2,222	0.0%
Subtotal	5,893	412	6,305	6.5%	5,926	414	6,340	6.5%
Glass								
Refillable glass	0	0	0	0.0%	0	0	0	0.0%
CA redemption glass	693	928	1,621	57.3%	697	932	1,629	57.2%
Other recyclable glass	234	792	1,025	77.2%	235	796	1,031	77.2%
Other non-recyclable glass	678	6	685	0.9%	682	6	688	0.9%
Subtotal	1,605	1,726	3,331	51.8%	1,614	1,734	3,348	51.8%
Metals								
Aluminum cans	33	258	291	88.7%	33	260	293	88.7%
Tin cans	223	334	556	60.0%	224	335	559	59.9%
Ferrous metals	2,328	4,192	6,520	64.3%	2,341	4,212	6,553	64.3%
Non-ferrous metals	610	307	917	33.5%	613	309	922	33.5%
White goods	698	641	1,339	47.9%	702	644	1,346	47.9%
Other metals	495	130	625	20.8%	498	131	629	20.8%
Subtotal	4,387	5,863	10,249	57.2%	4,411	5,891	10,302	57.2%
Yard Waste	3,005	702	3,707	18.9%	3,022	705	3,727	18.9%
Organics								
Food waste	7,484	63	7,547	0.8%	7,525	63	7,588	0.8%
Wood waste	6,667	1,462	8,130	18.0%	6,704	1,469	8,173	18.0%
Tires and rubber	1,657	240	1,896	12.6%	1,666	241	1,907	12.6%
Diapers	480	13	493	2.6%	483	13	495	2.6%
Textiles and leather	2,012	12	2,023	0.6%	2,023	12	2,034	0.6%
Other organics	915	0	915	0.0%	919	0	919	0.0%
Subtotal	19,214	1,789	21,003	8.5%	19,320	1,797	21,117	8.5%
Other Wastes								
Inert solids	1,054	6,329	7,384	85.7%	1,061	6,360	7,421	85.7%
Hazardous waste	61	0	61	0.0%	61	0	61	0.0%
Miscellaneous	762	0	762	0.0%	766	0	766	0.0%
Subtotal	1,877	6,329	8,207	77.1%	1,888	6,360	8,248	77.1%
Special Wastes								
Ash	12	17,273	17,284	99.9%	23	17,355	17,378	99.9%
Sewage sludge	0	0	0	0.0%	0	0	0	0.0%
Asbestos	0	0	0	0.0%	0	0	0	0.0%
Auto shredder	0	0	0	0.0%	0	0	0	0.0%
Auto bodies	0	0	0	0.0%	0	0	0	0.0%
Other special waste	0	0	0	0.0%	0	0	0	0.0%
Subtotal	12	17,273	17,284	99.9%	23	17,355	17,378	99.9%
Total Waste	48,683	49,445	98,127	50.4%	48,967	49,682	98,649	50.4%

An additional 10% diversion credit should be added to total diversion percentage after January 1, 1995 as a result of transformation occurring at the CREF.

15 YEAR WASTE GENERATION PROJECTIONS

- Commerce
With SRRE Implementation

WASTE TYPE	2003				2004			
	Disposal	Diversion	Generation	Percent	Disposal	Diversion	Generation	Percent
Paper								
Corrugated Containers	5,707	9,788	15,495	63.2%	5,740	9,835	15,575	63.1%
Mixed Paper	3,227	2,867	6,094	47.0%	3,246	2,881	6,127	47.0%
Newspaper	609	1,754	2,363	74.2%	613	1,762	2,375	74.2%
Ledger	528	835	1,363	61.2%	531	839	1,370	61.2%
Other Paper	2,766	256	3,022	8.5%	2,781	258	3,039	8.5%
Subtotal	12,837	15,499	28,336	54.7%	12,912	15,574	28,486	54.7%
Plastic								
Containers	571	30	601	5.1%	574	31	604	5.1%
PET containers	8	19	27	71.2%	8	19	27	71.2%
HDPE containers	211	366	577	63.5%	212	368	580	63.5%
Film plastics	2,211	0	2,211	0.0%	2,223	0	2,223	0.0%
Polystyrene	724	0	724	0.0%	728	0	728	0.0%
Other plastics	2,234	0	2,234	0.0%	2,247	0	2,247	0.0%
Subtotal	5,959	416	6,374	6.5%	5,992	418	6,410	6.5%
Glass								
Refillable glass	0	0	0	0.0%	0	0	0	0.0%
CA redemption glass	701	937	1,638	57.2%	705	941	1,646	57.2%
Other recyclable glass	237	799	1,036	77.1%	239	803	1,042	77.1%
Other non-recyclable glass	686	6	692	0.9%	689	6	696	0.9%
Subtotal	1,623	1,743	3,366	51.8%	1,633	1,751	3,384	51.7%
Metals								
Aluminum cans	33	261	294	88.6%	34	262	296	88.6%
Tin cans	226	337	562	59.9%	227	338	566	59.8%
Ferrous metals	2,354	4,232	6,586	64.3%	2,367	4,253	6,620	64.2%
Non-ferrous metals	616	310	927	33.5%	620	312	932	33.5%
White goods	706	647	1,354	47.8%	710	651	1,361	47.8%
Other metals	501	131	632	20.8%	504	132	636	20.8%
Subtotal	4,436	5,919	10,355	57.2%	4,461	5,947	10,409	57.1%
Yard Waste	3,039	708	3,747	18.9%	3,056	712	3,767	18.9%
Organics								
Food waste	7,566	64	7,629	0.8%	7,607	64	7,671	0.8%
Wood waste	6,741	1,476	8,217	18.0%	6,778	1,483	8,262	18.0%
Tires and rubber	1,675	242	1,917	12.6%	1,685	243	1,928	12.6%
Diapers	485	13	498	2.6%	488	13	501	2.5%
Textiles and leather	2,034	12	2,046	0.6%	2,045	12	2,057	0.6%
Other organics	925	0	925	0.0%	930	0	930	0.0%
Subtotal	19,426	1,806	21,232	8.5%	19,533	1,815	21,348	8.5%
Other Wastes								
Inert solids	1,068	6,390	7,458	85.7%	1,074	6,421	7,495	85.7%
Hazardous waste	62	0	62	0.0%	62	0	62	0.0%
Miscellaneous	770	0	770	0.0%	775	0	775	0.0%
Subtotal	1,900	6,390	8,290	77.1%	1,911	6,421	8,332	77.1%
Special Wastes								
Ash	35	17,439	17,474	99.8%	48	17,522	17,570	99.7%
Sewage sludge	0	0	0	0.0%	0	0	0	0.0%
Asbestos	0	0	0	0.0%	0	0	0	0.0%
Auto shredder	0	0	0	0.0%	0	0	0	0.0%
Auto bodies	0	0	0	0.0%	0	0	0	0.0%
Other special waste	0	0	0	0.0%	0	0	0	0.0%
Subtotal	35	17,439	17,474	99.8%	48	17,522	17,570	99.7%
Total Waste	49,254	49,920	99,175	50.3%	49,545	50,160	99,705	50.3%

An additional 10% diversion credit should be added to total diversion percentage after January 1, 1995 as a result of transformation occurring at the CREF.

15 YEAR WASTE GENERATION PROJECTIONS

- Commerce
With SRRE Implementation

WASTE TYPE	1997				1998			
	Disposal	Diversion	Generation	Percent	Disposal	Diversion	Generation	Percent
Paper								
Corrugated Containers	5,683	9,341	15,024	62.2%	5,658	9,443	15,101	62.5%
Mixed Paper	4,009	1,895	5,904	32.1%	3,729	2,206	5,935	37.2%
Newspaper	1,097	1,192	2,290	52.1%	930	1,371	2,302	59.6%
Ledger	513	808	1,321	61.2%	515	813	1,328	61.2%
Other Paper	2,678	249	2,927	8.5%	2,692	250	2,942	8.5%
Subtotal	13,979	13,486	27,466	49.1%	13,524	14,083	27,608	51.0%
Plastic								
Containers	557	25	582	4.3%	558	27	585	4.6%
PET containers	7	19	26	71.3%	7	19	26	71.3%
HDPE containers	349	210	559	37.6%	301	260	562	46.4%
Film plastics	2,141	0	2,141	0.0%	2,152	0	2,152	0.0%
Polystyrene	701	0	701	0.0%	705	0	705	0.0%
Other plastics	2,163	0	2,163	0.0%	2,175	0	2,175	0.0%
Subtotal	5,917	254	6,171	4.1%	5,898	306	6,204	4.9%
Glass								
Refillable glass	0	0	0	0.0%	0	0	0	0.0%
CA redemption glass	851	737	1,588	46.4%	797	799	1,596	50.1%
Other recyclable glass	504	500	1,004	49.8%	413	596	1,009	59.0%
Other non-recyclable glass	664	6	670	0.9%	667	6	674	0.9%
Subtotal	2,019	1,243	3,262	38.1%	1,877	1,401	3,279	42.7%
Metals								
Aluminum cans	45	241	286	84.3%	41	246	287	85.8%
Tin cans	371	173	544	31.8%	321	226	547	41.3%
Ferrous metals	2,321	4,070	6,391	63.7%	2,319	4,104	6,423	63.9%
Non-ferrous metals	597	302	898	33.6%	600	303	903	33.6%
White goods	866	444	1,310	33.9%	808	509	1,317	38.6%
Other metals	485	128	612	20.8%	487	128	616	20.8%
Subtotal	4,684	5,358	10,042	53.4%	4,577	5,516	10,093	54.7%
Yard Waste	2,952	676	3,628	18.6%	2,964	684	3,647	18.7%
Organics								
Food waste	7,324	62	7,386	0.8%	7,363	62	7,425	0.8%
Wood waste	6,694	1,265	7,959	15.9%	6,673	1,328	8,001	16.6%
Tires and rubber	1,656	200	1,856	10.8%	1,653	213	1,866	11.4%
Diapers	470	12	482	2.6%	472	12	485	2.6%
Textiles and leather	1,969	11	1,980	0.6%	1,980	11	1,991	0.6%
Other organics	895	0	895	0.0%	900	0	900	0.0%
Subtotal	19,007	1,551	20,558	7.5%	19,041	1,627	20,668	7.9%
Other Wastes								
Inert solids	1,119	6,119	7,238	84.5%	1,095	6,179	7,274	84.9%
Hazardous waste	60	0	60	0.0%	60	0	60	0.0%
Miscellaneous	746	0	746	0.0%	750	0	750	0.0%
Subtotal	1,924	6,119	8,044	76.1%	1,905	6,179	8,084	76.4%
Special Wastes								
Ash	-2	16,918	16,915	100.0%	-2	17,008	17,006	100.0%
Sewage sludge	0	0	0	0.0%	0	0	0	0.0%
Asbestos	0	0	0	0.0%	0	0	0	0.0%
Auto shredder	0	0	0	0.0%	0	0	0	0.0%
Auto bodies	0	0	0	0.0%	0	0	0	0.0%
Other special waste	0	0	0	0.0%	0	0	0	0.0%
Subtotal	-2	16,918	16,915	100.0%	-2	17,008	17,006	100.0%
Total Waste	50,480	45,605	96,085	47.5%	49,784	46,806	96,589	48.5%

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15 YEAR WASTE GENERATION PROJECTIONS

- Commerce
With SRRE Implementation

WASTE TYPE	1999				2000			
	Disposal	Diversion	Generation	Percent	Disposal	Diversion	Generation	Percent
Paper								
Corrugated Containers	5,633	9,546	15,179	62.9%	5,608	9,648	15,257	63.2%
Mixed Paper	3,450	2,516	5,966	42.2%	3,172	2,826	5,998	47.1%
Newspaper	764	1,550	2,314	67.0%	597	1,729	2,326	74.3%
Ledger	517	818	1,335	61.3%	519	823	1,342	61.3%
Other Paper	2,706	251	2,958	8.5%	2,721	253	2,974	8.5%
Subtotal	13,070	14,681	27,751	52.9%	12,617	15,278	27,896	54.8%
Plastic								
Containers	560	28	588	4.8%	561	30	591	5.1%
PET containers	8	19	26	71.3%	8	19	26	71.3%
HDPE containers	254	311	565	55.0%	207	361	568	63.6%
Film plastics	2,164	0	2,164	0.0%	2,175	0	2,175	0.0%
Polystyrene	709	0	709	0.0%	712	0	712	0.0%
Other plastics	2,186	0	2,186	0.0%	2,198	0	2,198	0.0%
Subtotal	5,880	358	6,238	5.7%	5,861	410	6,271	6.5%
Glass								
Refillable glass	0	0	0	0.0%	0	0	0	0.0%
CA redemption glass	743	861	1,604	53.7%	689	924	1,612	57.3%
Other recyclable glass	323	692	1,015	68.2%	232	788	1,020	77.3%
Other non-recyclable glass	671	6	677	0.9%	675	6	681	0.9%
Subtotal	1,736	1,560	3,296	47.3%	1,595	1,718	3,313	51.8%
Metals								
Aluminum cans	37	252	288	87.2%	33	257	290	88.7%
Tin cans	271	279	550	50.7%	221	332	553	60.0%
Ferrous metals	2,317	4,138	6,455	64.1%	2,316	4,172	6,488	64.3%
Non-ferrous metals	603	304	908	33.5%	606	306	912	33.5%
White goods	751	574	1,324	43.3%	693	638	1,332	47.9%
Other metals	490	129	619	20.8%	493	129	622	20.8%
Subtotal	4,469	5,675	10,145	55.9%	4,362	5,835	10,197	57.2%
Yard Waste	2,976	691	3,667	18.8%	2,988	698	3,687	18.9%
Organics								
Food waste	7,403	62	7,465	0.8%	7,443	63	7,506	0.8%
Wood waste	6,652	1,392	8,044	17.3%	6,631	1,455	8,086	18.0%
Tires and rubber	1,650	226	1,876	12.0%	1,648	239	1,886	12.6%
Diapers	475	12	487	2.6%	478	13	490	2.6%
Textiles and leather	1,990	11	2,002	0.6%	2,001	11	2,013	0.6%
Other organics	905	0	905	0.0%	910	0	910	0.0%
Subtotal	19,075	1,704	20,779	8.2%	19,110	1,780	20,890	8.5%
Other Wastes								
Inert solids	1,071	6,239	7,310	85.3%	1,048	6,299	7,347	85.7%
Hazardous waste	60	0	60	0.0%	61	0	61	0.0%
Miscellaneous	754	0	754	0.0%	758	0	758	0.0%
Subtotal	1,886	6,239	8,125	76.8%	1,866	6,299	8,165	77.1%
Special Wastes								
Ash	-1	17,099	17,098	100.0%	1	17,190	17,191	100.0%
Sewage sludge	0	0	0	0.0%	0	0	0	0.0%
Asbestos	0	0	0	0.0%	0	0	0	0.0%
Auto shredder	0	0	0	0.0%	0	0	0	0.0%
Auto bodies	0	0	0	0.0%	0	0	0	0.0%
Other special waste	0	0	0	0.0%	0	0	0	0.0%
Subtotal	-1	17,099	17,098	100.0%	1	17,190	17,191	100.0%
Total Waste	49,091	48,007	97,098	49.4%	48,402	49,208	97,610	50.4%

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15 YEAR WASTE GENERATION PROJECTIONS

- Commerce
With SRRE Implementation

WASTE TYPE	1995				1996			
	Disposal	Diversion	Generation	Diversion Percent	Disposal	Diversion	Generation	Diversion Percent
Paper								
Corrugated Containers	5,735	9,137	14,872	61.4%	5,709	9,239	14,948	61.8%
Mixed Paper	4,568	1,275	5,843	21.8%	4,288	1,585	5,873	27.0%
Newspaper	1,431	835	2,266	36.8%	1,264	1,014	2,278	44.5%
Ledger	509	798	1,308	61.1%	511	803	1,314	61.1%
Other Paper	2,649	247	2,896	8.5%	2,663	248	2,911	8.5%
Subtotal	14,892	12,292	27,185	45.2%	14,435	12,889	27,324	47.2%
Plastic								
Containers	554	22	576	3.8%	555	24	579	4.1%
PET containers	7	18	26	71.3%	7	18	26	71.3%
HDPE containers	444	109	553	19.8%	396	160	556	28.7%
Film plastics	2,118	0	2,118	0.0%	2,129	0	2,129	0.0%
Polystyrene	694	0	694	0.0%	697	0	697	0.0%
Other plastics	2,140	0	2,140	0.0%	2,151	0	2,151	0.0%
Subtotal	5,956	150	6,106	2.5%	5,937	202	6,138	3.3%
Glass								
Refillable glass	0	0	0	0.0%	0	0	0	0.0%
CA redemption glass	959	613	1,571	39.0%	905	675	1,579	42.7%
Other recyclable glass	686	308	994	31.0%	595	404	999	40.4%
Other non-recyclable glass	657	6	663	0.9%	660	6	666	0.9%
Subtotal	2,301	927	3,228	28.7%	2,160	1,085	3,245	33.4%
Metals								
Aluminum cans	53	230	283	81.3%	49	235	284	82.8%
Tin cans	472	67	539	12.4%	422	120	542	22.2%
Ferrous metals	2,324	4,003	6,327	63.3%	2,322	4,037	6,359	63.5%
Non-ferrous metals	590	299	889	33.6%	593	300	894	33.6%
White goods	981	315	1,296	24.3%	924	380	1,303	29.1%
Other metals	480	126	606	20.9%	482	127	609	20.8%
Subtotal	4,900	5,040	9,940	50.7%	4,792	5,199	9,991	52.0%
Yard Waste	2,928	662	3,590	18.4%	2,940	669	3,609	18.5%
Organics								
Food waste	7,246	61	7,308	0.8%	7,285	61	7,346	0.8%
Wood waste	6,737	1,139	7,876	14.5%	6,715	1,202	7,917	15.2%
Tires and rubber	1,661	175	1,836	9.5%	1,658	188	1,846	10.2%
Diapers	465	12	477	2.6%	467	12	480	2.6%
Textiles and leather	1,948	11	1,959	0.6%	1,958	11	1,970	0.6%
Other organics	886	0	886	0.0%	890	0	890	0.0%
Subtotal	18,944	1,398	20,342	6.9%	18,975	1,475	20,450	7.2%
Other Wastes								
Inert solids	1,167	6,000	7,167	83.7%	1,143	6,060	7,202	84.1%
Hazardous waste	59	0	59	0.0%	59	0	59	0.0%
Miscellaneous	738	0	738	0.0%	742	0	742	0.0%
Subtotal	1,964	6,000	7,964	75.3%	1,944	6,060	8,004	75.7%
Special Wastes								
Ash	0	16,736	16,736	100.0%	-2	16,827	16,825	100.0%
Sewage sludge	0	0	0	0.0%	0	0	0	0.0%
Asbestos	0	0	0	0.0%	0	0	0	0.0%
Auto shredder	0	0	0	0.0%	0	0	0	0.0%
Auto bodies	0	0	0	0.0%	0	0	0	0.0%
Other special waste	0	0	0	0.0%	0	0	0	0.0%
Subtotal	0	16,736	16,736	100.0%	-2	16,827	16,825	100.0%
Total Waste	51,885	43,205	95,090	45.4%	51,181	44,405	95,586	46.5%

An additional 10% diversion credit should be added to total diversion percentage after January 1, 1995 as a result of transformation occurring at the CREF.

15 YEAR WASTE GENERATION PROJECTIONS

- Commerce
With SRRE Implementation

WASTE TYPE	1991				1992			
	Disposal	Diversion	Generation	Percent	Disposal	Diversion	Generation	Percent
Paper								
Corrugated Containers	7,679	6,896	14,574	47.3%	7,192	7,456	14,648	50.9%
Mixed Paper	4,473	1,251	5,724	21.9%	4,496	1,257	5,753	21.8%
Newspaper	1,517	704	2,220	31.7%	1,495	736	2,232	33.0%
Ledger	700	582	1,281	45.4%	652	636	1,288	49.4%
Other Paper	2,594	242	2,836	8.5%	2,608	243	2,851	8.5%
Subtotal	16,962	9,674	26,636	36.3%	16,443	10,328	26,771	38.6%
Plastic								
Containers	559	4	564	0.8%	558	9	567	1.6%
PET containers	7	18	25	71.4%	7	18	25	71.3%
HDPE containers	462	79	542	14.6%	458	87	544	15.9%
Film plastics	2,074	0	2,074	0.0%	2,085	0	2,085	0.0%
Polystyrene	679	0	679	0.0%	683	0	683	0.0%
Other plastics	2,095	0	2,095	0.0%	2,106	0	2,106	0.0%
Subtotal	5,877	102	5,979	1.7%	5,897	114	6,010	1.9%
Glass								
Refillable glass	0	0	0	0.0%	0	0	0	0.0%
CA redemption glass	974	566	1,540	36.8%	970	578	1,548	37.3%
Other recyclable glass	712	261	974	26.8%	706	273	979	27.9%
Other non-recyclable glass	643	6	649	0.9%	646	6	652	0.9%
Subtotal	2,329	833	3,162	26.4%	2,322	857	3,179	27.0%
Metals								
Aluminum cans	68	209	277	75.5%	64	214	279	76.9%
Tin cans	514	13	527	2.5%	503	27	530	5.1%
Ferrous metals	2,276	3,927	6,203	63.3%	2,288	3,946	6,234	63.3%
Non-ferrous metals	578	293	871	33.6%	581	294	875	33.6%
White goods	1,202	67	1,269	5.3%	1,147	129	1,276	10.1%
Other metals	470	124	594	20.9%	472	125	597	20.9%
Subtotal	5,108	4,634	9,742	47.6%	5,056	4,735	9,791	48.4%
Yard Waste	3,179	337	3,516	9.6%	3,116	418	3,534	11.8%
Organics								
Food waste	7,096	60	7,156	0.8%	7,133	60	7,193	0.8%
Wood waste	6,597	1,117	7,714	14.5%	6,632	1,122	7,754	14.5%
Tires and rubber	1,718	80	1,798	4.5%	1,704	104	1,808	5.8%
Diapers	455	12	467	2.6%	458	12	470	2.6%
Textiles and leather	1,908	11	1,919	0.6%	1,918	11	1,929	0.6%
Other organics	867	0	867	0.0%	872	0	872	0.0%
Subtotal	18,640	1,280	19,921	6.4%	18,715	1,310	20,025	6.5%
Other Wastes								
Inert solids	1,958	5,068	7,027	72.1%	1,760	5,301	7,061	75.1%
Hazardous waste	58	0	58	0.0%	58	0	58	0.0%
Miscellaneous	723	0	723	0.0%	726	0	726	0.0%
Subtotal	2,739	5,068	7,807	64.9%	2,545	5,301	7,846	67.6%
Special Wastes								
Ash	13,040	3,347	16,388	20.4%	9,779	6,694	16,474	40.6%
Sewage sludge	0	0	0	0.0%	0	0	0	0.0%
Asbestos	0	0	0	0.0%	0	0	0	0.0%
Auto shredder	0	0	0	0.0%	0	0	0	0.0%
Auto bodies	0	0	0	0.0%	0	0	0	0.0%
Other special waste	0	0	0	0.0%	0	0	0	0.0%
Subtotal	13,040	3,347	16,388	20.4%	9,779	6,694	16,474	40.6%
Total Waste	67,875	25,275	93,150	27.1%	63,872	29,757	93,629	31.8%

15 YEAR WASTE GENERATION PROJECTIONS

- Commerce With SRRE Implementation

WASTE TYPE	1993				1994			
	Disposal	Diversion	Generation	Diversion Percent	Disposal	Diversion	Generation	Diversion Percent
Paper								
Corrugated Containers	6,706	8,016	14,722	54.4%	6,220	8,577	14,797	58.0%
Mixed Paper	4,520	1,263	5,783	21.8%	4,544	1,269	5,813	21.8%
Newspaper	1,474	769	2,243	34.3%	1,452	802	2,255	35.6%
Ledger	604	690	1,294	53.3%	557	744	1,301	57.2%
Other Paper	2,621	244	2,866	8.5%	2,635	246	2,881	8.5%
Subtotal	15,925	10,983	26,908	40.8%	15,408	11,637	27,046	43.0%
Plastic								
Containers	556	13	570	2.3%	555	18	573	3.1%
PET containers	7	18	25	71.3%	7	18	26	71.3%
HDPE containers	453	94	547	17.2%	448	102	550	18.5%
Film plastics	2,096	0	2,096	0.0%	2,107	0	2,107	0.0%
Polystyrene	686	0	686	0.0%	690	0	690	0.0%
Other plastics	2,117	0	2,117	0.0%	2,129	0	2,129	0.0%
Subtotal	5,916	126	6,042	2.1%	5,936	138	6,074	2.3%
Glass								
Refillable glass	0	0	0	0.0%	0	0	0	0.0%
CA redemption glass	966	589	1,555	37.9%	962	601	1,563	38.4%
Other recyclable glass	699	285	984	28.9%	692	296	989	30.0%
Other non-recyclable glass	650	6	656	0.9%	653	6	659	0.9%
Subtotal	2,315	880	3,195	27.5%	2,308	903	3,211	28.1%
Metals								
Aluminum cans	60	220	280	78.4%	57	225	281	79.9%
Tin cans	493	40	533	7.5%	482	54	536	10.0%
Ferrous metals	2,300	3,965	6,265	63.3%	2,312	3,984	6,296	63.3%
Non-ferrous metals	584	296	880	33.6%	587	297	884	33.6%
White goods	1,092	191	1,283	14.9%	1,037	253	1,290	19.6%
Other metals	475	125	600	20.9%	477	126	603	20.9%
Subtotal	5,004	4,837	9,840	49.2%	4,952	4,938	9,890	49.9%
Yard Waste	3,053	499	3,553	14.1%	2,990	581	3,571	16.3%
Organics								
Food waste	7,170	61	7,231	0.8%	7,208	61	7,269	0.8%
Wood waste	6,666	1,128	7,794	14.5%	6,702	1,133	7,835	14.5%
Tires and rubber	1,690	128	1,817	7.0%	1,675	151	1,827	8.3%
Diapers	460	12	472	2.6%	462	12	475	2.6%
Textiles and leather	1,928	11	1,939	0.6%	1,938	11	1,949	0.6%
Other organics	876	0	876	0.0%	881	0	881	0.0%
Subtotal	18,790	1,339	20,129	6.7%	18,866	1,369	20,235	6.8%
Other Wastes								
Inert solids	1,562	5,534	7,096	78.0%	1,364	5,767	7,131	80.9%
Hazardous waste	58	0	58	0.0%	59	0	59	0.0%
Miscellaneous	730	0	730	0.0%	734	0	734	0.0%
Subtotal	2,351	5,534	7,885	70.2%	2,157	5,767	7,924	72.8%
Special Wastes								
Ash	6,519	10,042	16,560	60.6%	3,259	13,389	16,648	80.4%
Sewage sludge	0	0	0	0.0%	0	0	0	0.0%
Asbestos	0	0	0	0.0%	0	0	0	0.0%
Auto shredder	0	0	0	0.0%	0	0	0	0.0%
Auto bodies	0	0	0	0.0%	0	0	0	0.0%
Other special waste	0	0	0	0.0%	0	0	0	0.0%
Subtotal	6,519	10,042	16,560	60.6%	3,259	13,389	16,648	80.4%
Total Waste	59,872	34,239	94,112	36.4%	55,877	38,722	94,599	40.9%

15 YEAR WASTE GENERATION PROJECTIONS

WASTE TYPE	2003				2004			
	Disposal	Diversion	Generation	Percent	Disposal	Diversion	Generation	Percent
Paper								
Corrugated Containers	8,752	6,776	15,528	43.6%	8,800	6,811	15,611	43.6%
Mixed Paper	4,769	1,332	6,101	21.8%	4,795	1,339	6,134	21.8%
Newspaper	1,649	717	2,366	30.3%	1,658	721	2,378	30.3%
Ledger	801	564	1,365	41.3%	806	567	1,373	41.3%
Other Paper	2,766	258	3,024	8.5%	2,781	259	3,040	8.5%
Subtotal	18,737	9,646	28,383	34.0%	18,840	9,696	28,536	34.0%
Plastic								
Containers	601	0	601	0.0%	604	0	604	0.0%
PET containers	8	19	27	71.4%	8	19	27	71.4%
HDPE containers	501	77	578	13.3%	504	77	581	13.3%
Film plastics	2,211	0	2,211	0.0%	2,223	0	2,223	0.0%
Polystyrene	724	0	724	0.0%	728	0	728	0.0%
Other plastics	2,234	0	2,234	0.0%	2,247	0	2,247	0.0%
Subtotal	6,279	96	6,375	1.5%	6,314	97	6,410	1.5%
Glass								
Refillable glass	0	0	0	0.0%	0	0	0	0.0%
CA redemption glass	1,048	593	1,641	36.1%	1,054	596	1,649	36.1%
Other recyclable glass	770	268	1,038	25.8%	775	269	1,044	25.8%
Other non-recyclable glass	686	6	692	0.9%	689	6	695	0.9%
Subtotal	2,504	866	3,370	25.7%	2,518	871	3,389	25.7%
Metals								
Aluminum cans	77	218	295	73.9%	77	219	297	73.9%
Tin cans	562	0	562	0.0%	566	0	566	0.0%
Ferrous metals	2,427	4,180	6,607	63.3%	2,440	4,202	6,642	63.3%
Non-ferrous metals	616	311	928	33.6%	620	313	933	33.6%
White goods	1,348	5	1,354	0.4%	1,356	5	1,361	0.4%
Other metals	501	132	632	20.8%	504	132	636	20.8%
Subtotal	5,532	4,847	10,378	46.7%	5,562	4,872	10,434	46.7%
Yard Waste	3,475	274	3,749	7.3%	3,494	275	3,769	7.3%
Organics								
Food waste	7,566	64	7,630	0.8%	7,607	65	7,672	0.8%
Wood waste	7,034	1,189	8,223	14.5%	7,073	1,195	8,268	14.5%
Tires and rubber	1,857	61	1,918	3.2%	1,867	61	1,928	3.2%
Diapers	485	13	498	2.6%	488	13	501	2.6%
Textiles and leather	2,034	12	2,046	0.6%	2,045	12	2,057	0.6%
Other organics	925	0	925	0.0%	930	0	930	0.0%
Subtotal	19,900	1,339	21,239	6.3%	20,010	1,346	21,356	6.3%
Other Wastes								
Inert solids	2,311	5,172	7,483	69.1%	2,324	5,199	7,523	69.1%
Hazardous waste	62	0	62	0.0%	62	0	62	0.0%
Miscellaneous	770	0	770	0.0%	775	0	775	0.0%
Subtotal	3,143	5,172	8,315	62.2%	3,161	5,199	8,359	62.2%
Special Wastes								
Ash	17,473	0	17,473	0.0%	17,569	0	17,569	0.0%
Sewage sludge	0	0	0	0.0%	0	0	0	0.0%
Asbestos	0	0	0	0.0%	0	0	0	0.0%
Auto shredder	0	0	0	0.0%	0	0	0	0.0%
Auto bodies	0	0	0	0.0%	0	0	0	0.0%
Other special waste	0	0	0	0.0%	0	0	0	0.0%
Subtotal	17,473	0	17,473	0.0%	17,569	0	17,569	0.0%
Total Waste	77,043	22,240	99,283	22.4%	77,467	22,356	99,823	22.4%

15 YEAR WASTE GENERATION PROJECTIONS

WASTE TYPE	2005					2006			
	Disposal	Diversion	Generation	Diversion Percent		Disposal	Diversion	Generation	Diversion Percent
Paper									
Corrugated Containers	8,849	6,846	15,695	43.6%		8,898	6,882	15,780	43.6%
Mixed Paper	4,822	1,346	6,167	21.8%		4,848	1,353	6,201	21.8%
Newspaper	1,667	724	2,391	30.3%		1,676	728	2,404	30.3%
Ledger	810	570	1,380	41.3%		815	573	1,387	41.3%
Other Paper	2,796	261	3,057	8.5%		2,812	262	3,074	8.5%
Subtotal	18,944	9,747	28,691	34.0%		19,049	9,798	28,847	34.0%
Plastic									
Containers	608	0	608	0.0%		611	0	611	0.0%
PET containers	8	19	27	71.4%		8	20	27	71.4%
HDPE containers	506	78	584	13.3%		509	78	587	13.3%
Film plastics	2,236	0	2,236	0.0%		2,248	0	2,248	0.0%
Polystyrene	732	0	732	0.0%		736	0	736	0.0%
Other plastics	2,259	0	2,259	0.0%		2,271	0	2,271	0.0%
Subtotal	6,348	97	6,446	1.5%		6,384	98	6,481	1.5%
Glass									
Refillable glass	0	0	0	0.0%		0	0	0	0.0%
CA redemption glass	1,059	599	1,658	36.1%		1,065	602	1,667	36.1%
Other recyclable glass	779	270	1,049	25.8%		783	272	1,055	25.8%
Other non-recyclable glass	693	6	699	0.9%		697	6	703	0.9%
Subtotal	2,532	875	3,407	25.7%		2,546	880	3,426	25.7%
Metals									
Aluminum cans	78	221	298	73.9%		78	222	300	73.9%
Tin cans	569	0	569	0.0%		572	0	572	0.0%
Ferrous metals	2,454	4,224	6,677	63.3%		2,467	4,246	6,713	63.2%
Non-ferrous metals	623	315	938	33.6%		627	316	943	33.5%
White goods	1,363	5	1,369	0.4%		1,371	5	1,376	0.4%
Other metals	506	133	639	20.8%		509	134	643	20.8%
Subtotal	5,593	4,897	10,490	46.7%		5,624	4,923	10,547	46.7%
Yard Waste	3,513	277	3,790	7.3%		3,533	278	3,811	7.3%
Organics									
Food waste	7,649	65	7,714	0.8%		7,692	65	7,757	0.8%
Wood waste	7,112	1,201	8,313	14.5%		7,151	1,208	8,359	14.4%
Tires and rubber	1,877	62	1,939	3.2%		1,888	62	1,950	3.2%
Diapers	491	13	504	2.6%		493	13	507	2.6%
Textiles and leather	2,056	12	2,069	0.6%		2,068	12	2,080	0.6%
Other organics	935	0	935	0.0%		940	0	940	0.0%
Subtotal	20,120	1,353	21,473	6.3%		20,232	1,360	21,592	6.3%
Other Wastes									
Inert solids	2,337	5,226	7,562	69.1%		2,350	5,253	7,603	69.1%
Hazardous waste	62	0	62	0.0%		63	0	63	0.0%
Miscellaneous	779	0	779	0.0%		783	0	783	0.0%
Subtotal	3,178	5,226	8,404	62.2%		3,196	5,253	8,449	62.2%
Special Wastes									
Ash	17,667	0	17,667	0.0%		17,765	0	17,765	0.0%
Sewage sludge	0	0	0	0.0%		0	0	0	0.0%
Asbestos	0	0	0	0.0%		0	0	0	0.0%
Auto shredder	0	0	0	0.0%		0	0	0	0.0%
Auto bodies	0	0	0	0.0%		0	0	0	0.0%
Other special waste	0	0	0	0.0%		0	0	0	0.0%
Subtotal	17,667	0	17,667	0.0%		17,765	0	17,765	0.0%
Total Waste	77,895	22,472	100,367	22.4%		78,327	22,590	100,917	22.4%

15 YEAR WASTE GENERATION PROJECTIONS

- Commerce

WASTE TYPE	1999					2000			
	Disposal	Diversion	Generation	Percent		Disposal	Diversion	Generation	Percent
Paper									
Corrugated Containers	8,564	6,636	15,200	43.7%		8,610	6,671	15,281	43.7%
Mixed Paper	4,666	1,304	5,971	21.8%		4,692	1,311	6,003	21.8%
Newspaper	1,613	702	2,315	30.3%		1,622	706	2,328	30.3%
Ledger	784	552	1,336	41.3%		788	555	1,343	41.3%
Other Paper	2,706	253	2,959	8.5%		2,721	254	2,975	8.5%
Subtotal	18,334	9,447	27,781	34.0%		18,433	9,497	27,930	34.0%
Plastic									
Containers	588	0	588	0.0%		591	0	591	0.0%
PET containers	8	19	26	71.4%		8	19	27	71.4%
HDPE containers	490	75	565	13.3%		493	76	569	13.3%
Film plastics	2,164	0	2,164	0.0%		2,175	0	2,175	0.0%
Polystyrene	709	0	709	0.0%		712	0	712	0.0%
Other plastics	2,186	0	2,186	0.0%		2,198	0	2,198	0.0%
Subtotal	6,144	94	6,238	1.5%		6,177	95	6,272	1.5%
Glass									
Refillable glass	0	0	0	0.0%		0	0	0	0.0%
CA redemption glass	1,025	581	1,606	36.2%		1,031	584	1,614	36.2%
Other recyclable glass	754	262	1,016	25.8%		758	263	1,021	25.8%
Other non-recyclable glass	671	6	677	0.9%		675	6	680	0.9%
Subtotal	2,450	848	3,299	25.7%		2,463	853	3,316	25.7%
Metals									
Aluminum cans	75	214	289	73.9%		76	215	291	73.9%
Tin cans	550	0	550	0.0%		553	0	553	0.0%
Ferrous metals	2,375	4,094	6,469	63.3%		2,388	4,115	6,503	63.3%
Non-ferrous metals	603	305	908	33.6%		606	307	913	33.6%
White goods	1,319	5	1,324	0.4%		1,326	5	1,332	0.4%
Other metals	490	129	619	20.8%		493	130	622	20.8%
Subtotal	5,413	4,747	10,160	46.7%		5,442	4,772	10,214	46.7%
Yard Waste	3,400	268	3,668	7.3%		3,418	270	3,688	7.3%
Organics									
Food waste	7,403	63	7,466	0.8%		7,443	63	7,506	0.8%
Wood waste	6,883	1,165	8,047	14.5%		6,920	1,171	8,091	14.5%
Tires and rubber	1,817	60	1,877	3.2%		1,827	60	1,887	3.2%
Diapers	475	13	488	2.6%		478	13	490	2.6%
Textiles and leather	1,990	12	2,002	0.6%		2,001	12	2,013	0.6%
Other organics	905	0	905	0.0%		910	0	910	0.0%
Subtotal	19,472	1,311	20,784	6.3%		19,578	1,318	20,896	6.3%
Other Wastes									
Inert solids	2,262	5,065	7,327	69.1%		2,274	5,091	7,365	69.1%
Hazardous waste	60	0	60	0.0%		61	0	61	0.0%
Miscellaneous	754	0	754	0.0%		758	0	758	0.0%
Subtotal	3,076	5,065	8,141	62.2%		3,092	5,091	8,184	62.2%
Special Wastes									
Ash	17,098	0	17,098	0.0%		17,190	0	17,190	0.0%
Sewage sludge	0	0	0	0.0%		0	0	0	0.0%
Asbestos	0	0	0	0.0%		0	0	0	0.0%
Auto shredder	0	0	0	0.0%		0	0	0	0.0%
Auto bodies	0	0	0	0.0%		0	0	0	0.0%
Other special waste	0	0	0	0.0%		0	0	0	0.0%
Subtotal	17,098	0	17,098	0.0%		17,190	0	17,190	0.0%
Total Waste	75,386	21,782	97,168	22.4%		75,795	21,896	97,690	22.4%

15 YEAR WASTE GENERATION PROJECTIONS

- Commerce

WASTE TYPE	2001				2002			
	Disposal	Diversion	Generation	Diversion Percent	Disposal	Diversion	Generation	Diversion Percent
Paper								
Corrugated Containers	8,657	6,705	15,363	43.6%	8,704	6,740	15,445	43.6%
Mixed Paper	4,717	1,318	6,035	21.8%	4,743	1,325	6,068	21.8%
Newspaper	1,631	710	2,340	30.3%	1,640	713	2,353	30.3%
Ledger	793	558	1,351	41.3%	797	561	1,358	41.3%
Other Paper	2,736	255	2,991	8.5%	2,751	257	3,007	8.5%
Subtotal	18,533	9,546	28,080	34.0%	18,635	9,596	28,231	34.0%
Plastic								
Containers	594	0	594	0.0%	598	0	598	0.0%
PET containers	8	19	27	71.4%	8	19	27	71.4%
HDPE containers	495	76	572	13.3%	498	77	575	13.3%
Film plastics	2,187	0	2,187	0.0%	2,199	0	2,199	0.0%
Polystyrene	716	0	716	0.0%	720	0	720	0.0%
Other plastics	2,210	0	2,210	0.0%	2,222	0	2,222	0.0%
Subtotal	6,211	95	6,306	1.5%	6,245	96	6,341	1.5%
Glass								
Refillable glass	0	0	0	0.0%	0	0	0	0.0%
CA redemption glass	1,036	587	1,623	36.1%	1,042	590	1,632	36.1%
Other recyclable glass	762	265	1,027	25.8%	766	266	1,032	25.8%
Other non-recyclable glass	678	6	684	0.9%	682	6	688	0.9%
Subtotal	2,477	857	3,334	25.7%	2,490	862	3,352	25.7%
Metals								
Aluminum cans	76	216	292	73.9%	77	217	294	73.9%
Tin cans	556	0	556	0.0%	559	0	559	0.0%
Ferrous metals	2,401	4,137	6,537	63.3%	2,414	4,158	6,572	63.3%
Non-ferrous metals	610	308	918	33.6%	613	310	923	33.6%
White goods	1,334	5	1,339	0.4%	1,341	5	1,346	0.4%
Other metals	495	130	626	20.8%	498	131	629	20.8%
Subtotal	5,472	4,797	10,268	46.7%	5,502	4,822	10,323	46.7%
Yard Waste	3,437	271	3,708	7.3%	3,456	273	3,728	7.3%
Organics								
Food waste	7,483	64	7,547	0.8%	7,524	64	7,588	0.8%
Wood waste	6,958	1,177	8,134	14.5%	6,996	1,183	8,179	14.5%
Tires and rubber	1,837	60	1,897	3.2%	1,847	61	1,907	3.2%
Diapers	480	13	493	2.6%	483	13	495	2.6%
Textiles and leather	2,012	12	2,024	0.6%	2,023	12	2,035	0.6%
Other organics	914	0	914	0.0%	919	0	919	0.0%
Subtotal	19,684	1,325	21,009	6.3%	19,792	1,332	21,124	6.3%
Other Wastes								
Inert solids	2,286	5,118	7,404	69.1%	2,299	5,145	7,443	69.1%
Hazardous waste	61	0	61	0.0%	61	0	61	0.0%
Miscellaneous	762	0	762	0.0%	766	0	766	0.0%
Subtotal	3,109	5,118	8,227	62.2%	3,126	5,145	8,271	62.2%
Special Wastes								
Ash	17,284	0	17,284	0.0%	17,378	0	17,378	0.0%
Sewage sludge	0	0	0	0.0%	0	0	0	0.0%
Asbestos	0	0	0	0.0%	0	0	0	0.0%
Auto shredder	0	0	0	0.0%	0	0	0	0.0%
Auto bodies	0	0	0	0.0%	0	0	0	0.0%
Other special waste	0	0	0	0.0%	0	0	0	0.0%
Subtotal	17,284	0	17,284	0.0%	17,378	0	17,378	0.0%
Total Waste	76,207	22,010	98,216	22.4%	76,623	22,125	98,747	22.4%

15 YEAR WASTE GENERATION PROJECTIONS

- Commerce

WASTE TYPE	1995					1996			
	Disposal	Diversion	Generation	Diversion Percent		Disposal	Diversion	Generation	Diversion Percent
Paper									
Corrugated Containers	8,383	6,499	14,882	43.7%		8,427	6,533	14,961	43.7%
Mixed Paper	4,568	1,278	5,845	21.9%		4,592	1,284	5,876	21.9%
Newspaper	1,579	688	2,267	30.3%		1,588	691	2,279	30.3%
Ledger	767	541	1,308	41.3%		772	544	1,315	41.3%
Other Paper	2,649	247	2,896	8.5%		2,663	249	2,912	8.5%
Subtotal	17,946	9,253	27,199	34.0%		18,042	9,301	27,343	34.0%
Plastic									
Containers	576	0	576	0.0%		579	0	579	0.0%
PET containers	7	18	26	71.5%		7	19	26	71.5%
HDPE containers	480	74	554	13.4%		482	74	556	13.3%
Film plastics	2,118	0	2,118	0.0%		2,129	0	2,129	0.0%
Polystyrene	694	0	694	0.0%		697	0	697	0.0%
Other plastics	2,140	0	2,140	0.0%		2,151	0	2,151	0.0%
Subtotal	6,014	92	6,106	1.5%		6,046	93	6,139	1.5%
Glass									
Refillable glass	0	0	0	0.0%		0	0	0	0.0%
CA redemption glass	1,004	569	1,572	36.2%		1,009	572	1,581	36.2%
Other recyclable glass	738	257	995	25.8%		742	258	1,000	25.8%
Other non-recyclable glass	657	6	662	0.9%		660	6	666	0.9%
Subtotal	2,398	831	3,229	25.7%		2,411	835	3,246	25.7%
Metals									
Aluminum cans	74	209	283	73.9%		74	210	285	73.9%
Tin cans	539	0	539	0.0%		542	0	542	0.0%
Ferrous metals	2,324	4,010	6,334	63.3%		2,337	4,031	6,367	63.3%
Non-ferrous metals	590	299	889	33.6%		593	300	894	33.6%
White goods	1,291	5	1,296	0.4%		1,298	5	1,303	0.4%
Other metals	480	126	606	20.8%		482	127	609	20.8%
Subtotal	5,298	4,649	9,947	46.7%		5,326	4,673	10,000	46.7%
Yard Waste	3,328	263	3,591	7.3%		3,346	264	3,610	7.3%
Organics									
Food waste	7,246	62	7,308	0.8%		7,285	62	7,347	0.8%
Wood waste	6,737	1,141	7,878	14.5%		6,773	1,147	7,920	14.5%
Tires and rubber	1,778	59	1,837	3.2%		1,788	59	1,847	3.2%
Diapers	465	12	477	2.6%		467	12	480	2.6%
Textiles and leather	1,948	11	1,960	0.6%		1,958	12	1,970	0.6%
Other organics	885	0	885	0.0%		890	0	890	0.0%
Subtotal	19,060	1,284	20,345	6.3%		19,162	1,291	20,453	6.3%
Other Wastes									
Inert solids	2,214	4,961	7,175	69.1%		2,226	4,987	7,212	69.1%
Hazardous waste	59	0	59	0.0%		59	0	59	0.0%
Miscellaneous	738	0	738	0.0%		742	0	742	0.0%
Subtotal	3,011	4,961	7,971	62.2%		3,027	4,987	8,013	62.2%
Special Wastes									
Ash	16,736	0	16,736	0.0%		16,825	0	16,825	0.0%
Sewage sludge	0	0	0	0.0%		0	0	0	0.0%
Asbestos	0	0	0	0.0%		0	0	0	0.0%
Auto shredder	0	0	0	0.0%		0	0	0	0.0%
Auto bodies	0	0	0	0.0%		0	0	0	0.0%
Other special waste	0	0	0	0.0%		0	0	0	0.0%
Subtotal	16,736	0	16,736	0.0%		16,825	0	16,825	0.0%
Total Waste	73,791	21,333	95,125	22.4%		74,184	21,445	95,629	22.4%

15 YEAR WASTE GENERATION PROJECTIONS

- Commerce

WASTE TYPE	1997					1998			
	Disposal	Diversion	Generation	Percent		Disposal	Diversion	Generation	Percent
Paper									
Corrugated Containers	8,472	6,567	15,040	43.7%		8,518	6,602	15,120	43.7%
Mixed Paper	4,617	1,291	5,907	21.9%		4,641	1,298	5,939	21.8%
Newspaper	1,596	695	2,291	30.3%		1,605	699	2,303	30.3%
Ledger	776	547	1,322	41.3%		780	549	1,329	41.3%
Other Paper	2,677	250	2,927	8.5%		2,692	251	2,943	8.5%
Subtotal	18,138	9,350	27,488	34.0%		18,236	9,398	27,634	34.0%
Plastic									
Containers	582	0	582	0.0%		585	0	585	0.0%
PET containers	7	19	26	71.5%		7	19	26	71.5%
HDPE containers	485	75	559	13.3%		487	75	562	13.3%
Film plastics	2,140	0	2,140	0.0%		2,152	0	2,152	0.0%
Polystyrene	701	0	701	0.0%		705	0	705	0.0%
Other plastics	2,163	0	2,163	0.0%		2,174	0	2,174	0.0%
Subtotal	6,078	93	6,172	1.5%		6,111	94	6,205	1.5%
Glass									
Refillable glass	0	0	0	0.0%		0	0	0	0.0%
CA redemption glass	1,014	575	1,589	36.2%		1,020	578	1,597	36.2%
Other recyclable glass	746	259	1,005	25.8%		750	261	1,010	25.8%
Other non-recyclable glass	664	6	670	0.9%		667	6	673	0.9%
Subtotal	2,424	840	3,264	25.7%		2,437	844	3,281	25.7%
Metals									
Aluminum cans	75	212	286	73.9%		75	213	288	73.9%
Tin cans	544	0	544	0.0%		547	0	547	0.0%
Ferrous metals	2,349	4,052	6,401	63.3%		2,362	4,073	6,435	63.3%
Non-ferrous metals	597	302	898	33.6%		600	303	903	33.6%
White goods	1,305	5	1,310	0.4%		1,312	5	1,317	0.4%
Other metals	485	128	612	20.8%		487	128	616	20.8%
Subtotal	5,355	4,698	10,053	46.7%		5,384	4,722	10,106	46.7%
Yard Waste	3,364	266	3,629	7.3%		3,382	267	3,649	7.3%
Organics									
Food waste	7,324	62	7,386	0.8%		7,363	63	7,426	0.8%
Wood waste	6,809	1,153	7,962	14.5%		6,846	1,159	8,004	14.5%
Tires and rubber	1,797	59	1,857	3.2%		1,807	59	1,866	3.2%
Diapers	470	12	482	2.6%		472	13	485	2.6%
Textiles and leather	1,969	12	1,981	0.6%		1,980	12	1,991	0.6%
Other organics	895	0	895	0.0%		900	0	900	0.0%
Subtotal	19,264	1,298	20,562	6.3%		19,368	1,305	20,672	6.3%
Other Wastes									
Inert solids	2,237	5,013	7,250	69.1%		2,249	5,039	7,288	69.1%
Hazardous waste	60	0	60	0.0%		60	0	60	0.0%
Miscellaneous	746	0	746	0.0%		750	0	750	0.0%
Subtotal	3,043	5,013	8,056	62.2%		3,059	5,039	8,098	62.2%
Special Wastes									
Ash	16,915	0	16,915	0.0%		17,006	0	17,006	0.0%
Sewage sludge	0	0	0	0.0%		0	0	0	0.0%
Asbestos	0	0	0	0.0%		0	0	0	0.0%
Auto shredder	0	0	0	0.0%		0	0	0	0.0%
Auto bodies	0	0	0	0.0%		0	0	0	0.0%
Other special waste	0	0	0	0.0%		0	0	0	0.0%
Subtotal	16,915	0	16,915	0.0%		17,006	0	17,006	0.0%
Total Waste	74,581	21,557	96,138	22.4%		74,982	21,669	96,651	22.4%

15 YEAR WASTE GENERATION PROJECTIONS

- Commerce

WASTE TYPE	1991				1992			
	Disposal	Diversion	Generation	Diversion Percent	Disposal	Diversion	Generation	Diversion Percent
Paper								
Corrugated Containers	8,208	6,366	14,574	43.7%	8,251	6,399	14,650	43.7%
Mixed Paper	4,473	1,251	5,724	21.9%	4,496	1,258	5,754	21.9%
Newspaper	1,546	674	2,220	30.3%	1,554	677	2,231	30.3%
Ledger	751	530	1,281	41.3%	755	533	1,288	41.3%
Other Paper	2,594	242	2,836	8.5%	2,608	244	2,851	8.5%
Subtotal	17,573	9,062	26,635	34.0%	17,665	9,110	26,774	34.0%
Plastic								
Containers	564	0	564	0.0%	567	0	567	0.0%
PET containers	7	18	25	71.5%	7	18	25	71.5%
HDPE containers	470	72	542	13.4%	472	73	545	13.4%
Film plastics	2,074	0	2,074	0.0%	2,085	0	2,085	0.0%
Polystyrene	679	0	679	0.0%	683	0	683	0.0%
Other plastics	2,095	0	2,095	0.0%	2,106	0	2,106	0.0%
Subtotal	5,889	90	5,979	1.5%	5,920	91	6,011	1.5%
Glass								
Refillable glass	0	0	0	0.0%	0	0	0	0.0%
CA redemption glass	983	557	1,540	36.2%	988	560	1,548	36.2%
Other recyclable glass	723	251	974	25.8%	726	253	979	25.8%
Other non-recyclable glass	643	6	649	0.9%	646	6	652	0.9%
Subtotal	2,348	814	3,162	25.7%	2,361	818	3,179	25.7%
Metals								
Aluminum cans	72	205	277	73.9%	73	206	279	73.9%
Tin cans	527	0	527	0.0%	530	0	530	0.0%
Ferrous metals	2,276	3,927	6,203	63.3%	2,288	3,948	6,236	63.3%
Non-ferrous metals	578	293	871	33.6%	581	294	875	33.6%
White goods	1,264	5	1,270	0.4%	1,271	5	1,276	0.4%
Other metals	470	124	593	20.8%	472	124	596	20.8%
Subtotal	5,188	4,553	9,741	46.7%	5,215	4,577	9,792	46.7%
Yard Waste	3,259	257	3,516	7.3%	3,276	259	3,535	7.3%
Organics								
Food waste	7,096	60	7,156	0.8%	7,133	61	7,193	0.8%
Wood waste	6,597	1,117	7,714	14.5%	6,632	1,123	7,754	14.5%
Tires and rubber	1,741	57	1,799	3.2%	1,750	58	1,808	3.2%
Diapers	455	12	467	2.6%	458	12	470	2.6%
Textiles and leather	1,908	11	1,919	0.6%	1,918	11	1,929	0.6%
Other organics	867	0	867	0.0%	872	0	872	0.0%
Subtotal	18,664	1,258	19,922	6.3%	18,761	1,265	20,026	6.3%
Other Wastes								
Inert solids	2,168	4,859	7,026	69.1%	2,179	4,884	7,063	69.1%
Hazardous waste	58	0	58	0.0%	58	0	58	0.0%
Miscellaneous	723	0	723	0.0%	726	0	726	0.0%
Subtotal	2,948	4,859	7,807	62.2%	2,963	4,884	7,847	62.2%
Special Wastes								
Ash	16,388	0	16,388	0.0%	16,473	0	16,473	0.0%
Sewage sludge	0	0	0	0.0%	0	0	0	0.0%
Asbestos	0	0	0	0.0%	0	0	0	0.0%
Auto shredder	0	0	0	0.0%	0	0	0	0.0%
Auto bodies	0	0	0	0.0%	0	0	0	0.0%
Other special waste	0	0	0	0.0%	0	0	0	0.0%
Subtotal	16,388	0	16,388	0.0%	16,473	0	16,473	0.0%
Total Waste	72,256	20,894	93,150	22.4%	72,634	21,003	93,637	22.4%

15 YEAR WASTE GENERATION PROJECTIONS

- Commerce

WASTE TYPE	1993				1994			
	Disposal	Diversion	Generation	Diversion Percent	Disposal	Diversion	Generation	Diversion Percent
Paper								
Corrugated Containers	8,295	6,432	14,727	43.7%	8,338	6,466	14,804	43.7%
Mixed Paper	4,520	1,264	5,784	21.9%	4,544	1,271	5,814	21.9%
Newspaper	1,563	681	2,243	30.3%	1,571	684	2,255	30.3%
Ledger	759	535	1,295	41.3%	763	538	1,302	41.3%
Other Paper	2,621	245	2,866	8.5%	2,635	246	2,881	8.5%
Subtotal	17,758	9,157	26,915	34.0%	17,851	9,205	27,056	34.0%
Plastic								
Containers	570	0	570	0.0%	573	0	573	0.0%
PET containers	7	18	26	71.5%	7	18	26	71.5%
HDPE containers	475	73	548	13.4%	477	74	551	13.4%
Film plastics	2,096	0	2,096	0.0%	2,107	0	2,107	0.0%
Polystyrene	686	0	686	0.0%	690	0	690	0.0%
Other plastics	2,117	0	2,117	0.0%	2,129	0	2,129	0.0%
Subtotal	5,951	91	6,042	1.5%	5,982	92	6,074	1.5%
Glass								
Refillable glass	0	0	0	0.0%	0	0	0	0.0%
CA redemption glass	993	563	1,556	36.2%	998	566	1,564	36.2%
Other recyclable glass	730	254	984	25.8%	734	255	989	25.8%
Other non-recyclable glass	650	6	656	0.9%	653	6	659	0.9%
Subtotal	2,373	822	3,195	25.7%	2,386	827	3,212	25.7%
Metals								
Aluminum cans	73	207	280	73.9%	73	208	282	73.9%
Tin cans	533	0	533	0.0%	536	0	536	0.0%
Ferrous metals	2,300	3,968	6,268	63.3%	2,312	3,989	6,301	63.3%
Non-ferrous metals	584	296	880	33.6%	587	297	884	33.6%
White goods	1,278	5	1,283	0.4%	1,285	5	1,290	0.4%
Other metals	475	125	600	20.8%	477	126	603	20.8%
Subtotal	5,243	4,601	9,844	46.7%	5,270	4,625	9,895	46.7%
Yard Waste	3,293	260	3,553	7.3%	3,310	261	3,572	7.3%
Organics								
Food waste	7,170	61	7,231	0.8%	7,208	61	7,269	0.8%
Wood waste	6,666	1,129	7,795	14.5%	6,702	1,135	7,836	14.5%
Tires and rubber	1,760	58	1,818	3.2%	1,769	58	1,827	3.2%
Diapers	460	12	472	2.6%	462	12	475	2.6%
Textiles and leather	1,928	11	1,939	0.6%	1,938	11	1,949	0.6%
Other organics	876	0	876	0.0%	881	0	881	0.0%
Subtotal	18,860	1,271	20,131	6.3%	18,960	1,278	20,238	6.3%
Other Wastes								
Inert solids	2,190	4,909	7,100	69.1%	2,202	4,935	7,137	69.1%
Hazardous waste	58	0	58	0.0%	59	0	59	0.0%
Miscellaneous	730	0	730	0.0%	734	0	734	0.0%
Subtotal	2,979	4,909	7,888	62.2%	2,995	4,935	7,930	62.2%
Special Wastes								
Ash	16,560	0	16,560	0.0%	16,648	0	16,648	0.0%
Sewage sludge	0	0	0	0.0%	0	0	0	0.0%
Asbestos	0	0	0	0.0%	0	0	0	0.0%
Auto shredder	0	0	0	0.0%	0	0	0	0.0%
Auto bodies	0	0	0	0.0%	0	0	0	0.0%
Other special waste	0	0	0	0.0%	0	0	0	0.0%
Subtotal	16,560	0	16,560	0.0%	16,648	0	16,648	0.0%
Total Waste	73,016	21,113	94,129	22.4%	73,402	21,223	94,625	22.4%

3 SOURCE REDUCTION COMPONENT

3 SOURCE REDUCTION COMPONENT

Source reduction is the design, manufacture, acquisition, and use of materials in such a way as to minimize the quantity of waste produced. Simply put, it means reducing waste at the source, whether at home, the office, or factory before it is ever generated. It is a preventative measure and carries the highest priority in California's waste management hierarchy. However, because of its intangible nature, source reduction is difficult to quantify.

In the long term, the concept of source reduction can influence how commercial and industrial entities produce, ship, and sell goods. In the short term, source reduction considerations can influence consumers' and other buyers' decisions about what and how they buy whether it is a decision based on bulk-buying, product durability or recyclability, or eventual impact on the environment.

However, in the City of Commerce (City) refuse is delivered under existing refuse arrangements to the Commerce Refuse to Energy Facility (CREF). The waste types generally targeted for source reduction, e.g., other organics, paper, and plastics, are valuable because they provide higher BTUs for combustion than other types of wastes. As a consequence of combustion, all refuse including the aforementioned material types, are reduced to nearly 10% of their volume. Given the relative importance of these higher energy wastes to the economic viability of CREF and their relatively small contribution to ash, the City plans to implement a limited source reduction program as explained herein.

This source reduction component includes the following sections: (1) a statement of objectives for the City; (2) a description of existing conditions; (3) an evaluation of program alternatives; (4) the selected program for implementation; (5) an implementation plan; and (6) a monitoring and evaluation plan.

3.1 OBJECTIVES

Specific source reduction objectives have been developed based on the goals of the City as described in Section 1 and the guidelines presented

in Section 18734.1(a) of Article 6.2, Chapter 9, Title 14, of the California Code of Regulations. These objectives are listed below.

3.1.1 Short-Term Objectives

The following is the objective for the short-term planning period:

- To hold annual workshops to educate businesses and residents about source reduction, especially nonprocurement actions such as using ceramic cups instead of disposable cups by 1995
- To develop a City program to reduce nonessential packaging, reduce the use of nonrecyclable products, replace disposable materials with reusable materials, and purchase repairable products by 1995

3.1.2 Medium-Term Objectives

The following are specific objectives for the medium-term planning period:

- To continue to hold annual workshops to educate businesses and residents about source reduction, especially nonprocurement actions such as using ceramic cups instead of disposable cups
- To improve the City program to reduce nonessential packaging, reduce the use of nonrecyclable products, replace disposable materials with reusable materials, and purchase repairable products

3.1.3 Targeted Materials

Based upon an evaluation of the solid waste generation study (SWGS), the waste categories or types listed in Table 3-1 have been targeted as priorities for source reduction. The criteria listed beside each waste type or category provide the reason for targeting that waste type or category for diversion.

Table 3-1

Targeted Materials and Criteria for Selection

Targeted Waste Category or Type	Criteria for Selection
Metals	• Weight of waste • Potential to extend the useful life of these materials, products, or packaging • Noncombustibility
Glass	• Volume and weight of waste • Hazard of waste • Extent to which these materials have limited recyclability • Noncombustibility

3.2 EXISTING CONDITIONS**3.2.1 Existing Programs**

Existing source reduction activities include the use of washable diapers, appliance repair and reuse, and double-sided paper copying.

3.2.2 Quantities Diverted by Existing Source Reduction

Existing source reduction activities divert about 145 tons of waste per year as detailed in Section 2, SWGS. The methodology used to quantify the amounts of diverted waste is summarized in Section 2, SWGS, and presented in Appendix B.

3.2.3 Future Status of Source Reduction Programs

Existing efforts will be allowed to continue.

3.3 PROGRAM ALTERNATIVES

In this section, alternatives for individual source reduction programs are identified and evaluated.

3.3.1 Identification of Alternatives

A menu of 17 potential source reduction alternatives identified by the CIWMB and the County is presented in Table 3-3. They are organized into four categories: rate structure modifications; economic incentives; technical assistance and promotion; and regulatory programs. A full description of each alternative, including key design variables and implementation/management implications, can be found in Appendix C.

3.3.2 Evaluation of Alternatives

The evaluation methodology described in Section 1 and presented in full in Appendix A was used to evaluate all alternatives identified in Table 3-3 (see Appendix D-2 for the evaluation summary). However, once alternatives were evaluated, selection was based on existing conditions in the City only. The unique presence of the CREF and its ability to reduce the volume of wastes requiring landfill dictates that noncombustible materials should be diverted as a priority. However, these items (glass and metals) are adequately covered by the Recycling Component, Section 4.

Therefore, those alternatives that compete for waste types that contribute to the viability of CREF are inappropriate to selection for the City. It would appear that those alternatives that educate and provide incentives to reduce wastes at the source are more appropriate. These were selected as a consequence.

Table 3-2
Program Alternatives

Alternatives	Waste Stream Application
Rate Structure Modifications	
1- Local waste disposal fee modifications	ICI ⁽¹⁾
2- Quantity-based local user fees	Residential
Economic Incentives	
3- Loans, grants, and loan guarantees	ICI
4- Deposits, refunds, and rebates	Residential/ICI
5- Business license fees	ICI
6- Local taxes, fees, and fines	Residential/ICI
Technical Assistance and Promotion	
7- Waste evaluations	ICI
8- Assistance with on-site composting and mulching activities	Residential/ICI
9- Technical assistance to businesses and industry and consumer organizations	Residential/ICI
10- Educational efforts	Residential/ICI
11- Awards and public recognition	
12- Nonprocurement source reduction activities	Residential/ICI
13- Demonstration programs	Residential/ICI
Regulatory Programs	
14- Government procurement ordinances	ICI
15- Incentives for land-use practices which promote source reduction	Residential/ICI
16- Required waste reduction planning by nonresidential generators	ICI
17- Product and packaging bans	ICI

(1) ICI - Industrial, commercial, and institutional [sources]

3.4 PROGRAM SELECTION

This section presents the alternatives that were selected to form the source reduction program of the City.

3.4.1 Program Description

3.4.2 Existing Programs

Existing programs will be allowed to continue, and shall be documented through the proposed monitoring and evaluation program. Surveys will be most likely used to gauge citizen and business participation.

3.4.3 New Programs

Alternatives 10, 11, and 12 most closely fit the objectives of the City with regards to source reduction. They are described below.

3.4.3.1 Alternative 10 - Educational Efforts

The City will educate residents, institutions, and businesses about the need for source reduction and about specific opportunities to reduce waste at the source. The educational campaign will continue throughout both planning periods until a conservation ethic is firmly rooted in the community and the waste diversion goals have been met.

For education to be successful, it must both motivate people and provide them with specific ideas for source reduction. For example, "environmental shopping" source reduction campaigns have provided useful ideas, but failed to motivate consumers and businesses to integrate source reduction activities into their daily habits. Thus, the educational effort of the City will focus on providing motivation, information about source reduction programs, and providing source reduction ideas.

In the short term, the City will:

- Develop a motivational campaign that promotes the concepts of source reduction, recycling, and composting as activities that benefit personal income, the City, and the environment. Because motivational campaigns rely on multimedia presentation for success, the City will work

cooperatively with other jurisdictions to share the cost and impact of media presentations that go beyond City boundaries (e.g., TV and radio).

- Develop and distribute educational materials for businesses and residents.
- Develop and encourage implementation of a K-12 curriculum that motivates and teaches the principles of source reduction as the preferred waste management alternative.

In the medium term, this alternative will focus on developing more interactive educational avenues such as seminars and workshops targeted toward different types of waste generators.

Educational efforts have been selected as part of the source reduction program because they:

- Target all generators of waste and most components of the waste stream
- Received no ratings of "low" in the evaluation matrix
- Are essential to successful implementation of much of this source reduction program

3.4.3.2 Alternative 11 - Awards

The City plans to provide an incentive to citizens and businesses by developing and implementing an award program to reward those who significantly contribute to the City's program of source reduction. This program will be implemented in conjunction with the education and public information component programs.

This alternative is selected because it adds an important incentive to individuals and organizations to participate in the City's program.

3.4.3.3 Alternative 12 - Nonprocurement Source Reduction Activities

The City plans to provide a positive model of source reduction to local citizens and businesses. Source reduction activities will include but not be limited to double-sided copying, xeriscaping and on-site composting,

and avoiding the purchase of nonrecyclable, nondurable, and nonessential products.

In the short term, the City will develop and implement nonprocurement source reduction activities in all City offices, departments, and organizations receiving funding or support from the City. The City will focus on developing, adopting, and implementing guidelines for all City offices that encourage employees and others to engage in source reduction activities. Examples of the types of source reduction activities that the City could engage in are double-sided copying; having employees use ceramic mugs, glasses, and other reusable dishes; reducing junk mail; and making scratch paper pads from discarded paper.

The City plans to enact a model procurement ordinance favoring the purchase of products and packaging which are durable, recyclable, reusable, and/or contain recycled material content.

In the medium term, the County will continue this alternative and all activities.

This alternative was selected because:

- The alternative provides valuable first-hand experience to the City staff who will provide technical assistance to local businesses and institutions.
- The City should serve as a model for local businesses and institutions.
- Nonprocurement source reduction activities can be highly cost effective.

3.4.4 Estimate of Quantities to Be Diverted by Program

The City source reduction program is intended to educate and inform citizens and businesses about choices that can be made with regards to reducing wastefulness. While the intention of the City is not to encourage waste, it is important to maintain the economic viability of the CREF. Therefore, the City plans to encourage existing programs and count that diversion in the future. However, it does not believe that the proposed program will divert significant new amounts of wastes.

3.4.5 Anticipated End-Uses

Alternatives selected do not produce a material or product, and do not have any anticipated end uses.

3.4.6 Materials Handling Methods

All aspects of the City's source reduction program do not require any handling of materials.

3.4.7 Facility Needs

There are no facility needs associated with these alternatives.

3.5 PROGRAM IMPLEMENTATION

The following section identifies the tasks necessary to implement the program, the agency responsible for implementation, and the implementation schedule and costs.

3.5.1 Short-Term Implementation Plan

The short-term implementation plan for the selected alternatives, including specific tasks, start and finish dates, and the City staff responsible for implementation, is presented in Table 3-3. The primary responsibility for implementing the source reduction program rests with the Community Development Department (CDD).

Table 3-3

Short-Term Implementation Plan

Alternative/Task	Start	Finish	Responsibility
10- Educational Efforts			
• Formalize cooperative assistance, management, cost, risk sharing program among cities	1/92	6/92	CDD
• Develop and implement promotional campaign	7/92	12/95	CDD
• Develop and implement educational materials for residents	7/92	12/95	CDD
11- Awards			
• Design award program	7/92	12/92	CDD
• Integrate with EPIC	12/92	6/93	CDD
12- Nonprocurement Source Reduction Activities			
• Pilot in-house program	1/92	6/92	CDD
• Full program	6/92	12/95	CDD

3.5.2 Medium-Term Implementation Plan

The medium-term implementation plan for the selected alternatives, including specific tasks, start and finish dates, and the Clty staff responsible for implementation is presented in Table 3-4.

Table 3-4

Medium-Term Implementation Plan

Alternative/Task	Start	Finish	Responsibility
10- Educational Efforts			
• Modify and implement motivational campaign	1/96	1/2000	CDD
• Modify and implement educational materials for residents	1/96	1/2000	CDD
• Modify and implement curricula changes	1/96	1/2000	CDD
• Modify and conduct seminars and workshops	1/97	1/2000	CDD
11- Awards			
• Re-design award program	7/96	12/96	CDD
• Integrate with EPIC	12/96	6/99	CDD
12- Nonprocurement Source Reduction Activities			
• Modify in-house program	1/96	6/96	CDD
• Full program	6/96	12/99	CDD

3.5.3 Identification of Costs and Revenues

This section discusses the known implementation costs, revenues, and revenue sources necessary for implementation of the source reduction program. Cost data are summarized in Table 3-5.

Table 3-5

Source Reduction Implementation Costs

Alternative	Capital Costs (\$)	Annual Costs (\$)
10, 11, 12 - Educational Efforts, Awards and Nonprocurement Actions	(1)	(1)
Program Development and administration	0	56,000 ⁽²⁾
Monitoring and Evaluation	0	24,000 ⁽³⁾
Total	0	80,000

(1) See Section 7, Education and Public Information Component, for cost data

(2) Based on \$70,000 per staff person, 4 staff, 98 total days

(3) Based on \$70,000 per staff person, 4 staff, 32 total days; includes \$10,000 for waste auditing

It is assumed that the City will work cooperatively with the adjoining Cities and share information and resources for the educational efforts and technical assistance. It is also assumed that the City and each City of the Working Group will implement programs independently. While opportunities for resource-sharing exist in nearly all source reduction programs, education offers the best opportunity for cooperation and cost savings among the adjoining cities.

3.6 MONITORING AND EVALUATION OF PROGRAMS

3.6.1 Monitoring Methods for Objectives

The following sections describe the methods to be used by the County to quantify and monitor achievement of the objectives of the overall source reduction program and its individual alternatives. Those objectives

include diversion from solid waste landfills and reduction of waste hazards.

3.6.1.1 Recordkeeping

The City will keep records quarterly concerning the quantities of solid waste disposed by haulers at the CREF.

Records will be kept of participation rates and long-term effects stemming from all nonmandatory, participatory programs which include awards and public recognition, education and information programs, nonprocurement activities, and waste audits. Records will be made of the names and addresses of the participants in all of these participatory programs.

3.6.1.2 Program Follow-up

The City's CDD will follow up on the results of each program. This follow-up will consist of contacting participants, asking about their level of satisfaction with the program they participated in, finding out about all long-term habit and lifestyle changes resulting from participation in the program, and attempting to quantify amounts of waste diverted, if any, as a result of participation in the program.

3.6.1.3 Solicitation of Feedback

The CDD will solicit residents, businesses, and other waste generators for feedback concerning the overall source reduction program or any particular alternative. The CDD will also request comments and suggestions about changes in or additions to the source reduction program.

3.6.2 Diversion Programs Monitoring

Either one or both of the following methods shall be used to monitor implementation of the source reduction program and to evaluate its effectiveness:

- Targeted waste characterization studies involving a representative sampling of generator sites or recycling, composting, transformation, and solid waste landfill facilities to measure changes in the volume, weight, and hazards of specific materials

- An assessment of any changes in the design, production, distribution, sale, or use of selected products and packages which affect solid waste generation

3.6.3 Monitoring Information

The sections below provide information based upon the specific monitoring and evaluation methods selected for the source reduction program.

3.6.3.1 Written Criteria to Evaluate Effectiveness

The following criteria will be used to evaluate the program's effectiveness. There is no need to assess program performance as no credit for diversion will be taken.

- participation rate in various alternatives
- level of satisfaction with various alternatives
- lifestyle/habit changes resulting from program
- awareness level of residents and businesses and any other waste generators

3.6.3.2 Responsible Parties

The CDD shall be responsible for the program's monitoring, evaluation, and reporting.

3.6.3.3 Costs and Revenues

The known funding requirements for monitoring and evaluation of the source reduction program are included in Table 3-5.

3.6.3.4 Contingency Measures

There is no need for contingency measures as no diversion from new programs will be counted.

4 RECYCLING COMPONENT

4 RECYCLING COMPONENT

Recycling is the process by which materials otherwise destined for disposal are collected, reprocessed or remanufactured, and reused. One important purpose of recycling is to preserve the natural resources that go into manufactured goods. Recycling also will reduce the environmental impacts associated with solid waste disposal.

The recycling process includes four elements: separation, collection, processing, and marketing. A program must include each of the elements for genuine recycling to take place. As discussed in this section, many alternatives exist for each element of recycling. Collection programs, for example, can encompass many options such as curbside pickup, commercial or public buy-back/drop-off centers, and nonprofit fund-raising drives for newspaper or aluminum cans.

The recycling program for the City of Commerce (City) presents a special case. The City is a co-operator of a refuse-to-energy plant that recycles combustible waste into energy. This plant requires a minimum input of wastes; therefore, it dictates the type and extent of other diversion activities as discussed herein. It is noted that based on current law, a 10% diversion credit can be counted in the medium term based on the tonnage diverted by the facility.

This component includes a statement of objectives for the City, a description of existing conditions in the City, an evaluation of program alternatives, an implementation plan, and a monitoring and evaluation program.

4.1 OBJECTIVES

The following specific objectives stem from the overall goals described in Section 1 and have been developed based on Section 18734.1(a) of Article 6.2, Chapter 9, Title 14 of the California Code of Regulations.

4.1.1 Short-Term Objectives

The following are specific objectives for the short-term planning period:

- Direct recycling diversion efforts toward using ash from the Commerce Refuse-to-Energy Facility (CREF) in a beneficial manner, and divert noncombustible recyclables such as glass and metals generated by the commercial and industrial sector.
- Require the authorized residential hauler to design and begin implementation of a Citywide residential curbside recycling program by 1991 to recover 350 tons per year.
- Require the residential haulers of apartment buildings and townhouse complexes to design and begin implementation of a multifamily recycling program by mid-1992 to divert 111 tons per year.
- Consider appropriate means to collect, process, and market yard waste from all generating sectors.
- Continue City procurement practices that encourage the purchase of products with recycled content.
- Develop ordinances that may require all area businesses to recycle corrugated cardboard and high-grade paper by the end of 1992.
- Design and hold workshops on commercial recycling for area businesses.
- Consider the feasibility of a mechanized or manual material recovery facility (MRF) capability at the CREF to divert at least 25% of incoming waste to recycling by 1993.
- By the end of 1992, establish an ordinance to require businesses to submit a plan to the City describing their existing and planned diversion activities, and to report diversion quantities annually.
- Work with adjoining jurisdictions on applying to the California Integrated Waste Management Board (CIWMB) for approval as a Market Development Zone (MDZ) by July 1991.

4.1.2 Medium-Term Objectives

The following are specific objectives for the medium-term planning period:

- Site and/or implement a MRF (if environmentally, economically, and institutionally feasible) within the City limits by no later than the middle of 1996.
- Expand the Citywide residential curbside collection program to include mixed waste paper by mid-1997 to divert at least 200 tons per year.
- Encourage, through a public information campaign, the procurement of products containing recyclable material by area businesses.

4.1.3 Targeted Materials

Targets have been established based on analysis of the categories and types of materials available for recycling, as identified in the solid waste generation study (SWGS). Four waste categories are targeted for diversion and are shown in order of priority in Table 4-1.

Table 4-1
Targeted Materials

Waste Category	Waste Type	Criteria for Selection as Target
Plastics	All types	Volume, limit of recyclability, extent of nonrenewability, potential hazard in transformation
Glass	All types	Weight and noncombustibility
Other Organics	Wood wastes	Weight and handling difficulty
Metals	Tin cans and aluminum	Hazard, extent of nonrenewability, and noncombustibility

4.2 EXISTING CONDITIONS

This section briefly identifies the existing recycling programs, both public and private, that are currently servicing the City. Existing efforts are quantified to determine the amount of diverted materials. Finally, the future status of existing programs is considered.

4.2.1 Existing Programs

Based on the SWGS, most of the existing reportable diversion is credited to recycling (98%). Recycling accounts for an estimated 15,565 tons per year (based on 1990 data); this figure does not include inert materials or tires which are discussed in Section 6, Special Waste. Of this diversion, 88% is credited to the industrial/commercial sector through recovery and recycling of post-consumer, cardboard, ferrous metals, and wood wastes. There are an additional estimated 52,559 tons attributable to transformation; however, this transformed material cannot be counted toward diversion in the short-term planning period.

There are a variety of private sector activities operated in the City and within the area servicing the City, its residences, and its businesses. These programs are summarized in Table 4-2.

The City sponsors a market development activity, namely procurement of products with recycled content. Since the City sponsors a residential curbside collection program for 570 households, it has an existing public information program (see Section 7). The curbside collection program was initiated in December 1990. Also, the City initiated a City Hall recycling program in December 1990.

4.2.2 Quantity of Waste Diverted

The City contacted organizations and firms involved in recycling to identify the materials diverted and to document tonnage figures for 1990-91. The detailed methodology for determining quantities is discussed in Section 2 and detailed in Appendix B. The quantities of materials diverted through recycling activities amounted to 15,565 tons (13.6%) of the solid waste generated in 1990; this does not include construction and demolition debris or tires. These items are presented in the Special Waste Component (Section 6.). Data presented in Table 4-2 are summarized from the SWGS and Appendix B.

TABLE 4-2
SOLID WASTE DIVERSION BY PROGRAM AND MATERIAL TYPE

	Private Business	Commercial Recycler	Curbside Collection	CRC	Major Retailer	Metal Dealer
Corrugated	880	2,910	0	0	141	0
Mixed	0	621	0	0	0	0
Newspaper	0	627	43	0	0	0
Ledger	0	176	0	0	0	0
Other	0	240	0	0	0	0
TOTAL PAPER	880	4,575	43	0	141	0
Containers	0	0	0	0	0	0
PET	0	16	0	2	0	0
HDPE	60	9	3	0	0	0
Film	0	0	0	0	0	0
Polystyrene	0	0	0	0	0	0
Other	0	0	0	0	0	0
TOTAL PLASTICS	60	25	3	2	0	0
CRV	0	432	14	56	0	0
Other recyclable	0	63	2	8	0	0
Other non-recyclable	0	0	0	0	0	0
TOTAL GLASS	0	495	16	65	0	0
Aluminum Cans	0	90	1	54	0	0
Tin Cans	0	0	0	0	0	0
Ferrous	0	0	3	3,600	0	176
Non-Ferrous	0	28	0	0	0	191
White Goods	0	0	0	0	0	0
Other	0	0	0	0	0	0
TOTAL METALS	0	117	4	3,654	0	367
Grass/Leaves	0	0	0	0	0	0
Prunings	0	0	0	0	0	0
TOTAL YARD WASTE	0	0	0	0	0	0
Food	0	60	0	0	0	0
Wood	740	0	0	0	0	0
Tires	0	0	0	0	0	0
Diapers	0	0	0	0	0	0
Textiles and leather	0	0	0	0	0	0
Other Organics	0	0	0	0	0	0
TOTAL O. ORGANICS	740	60	0	0	0	0
Inerts	0	0	0	0	0	0
Hazardous Waste	0	0	0	0	0	0
Miscellaneous	0	0	0	0	0	0
TOTAL O. WASTES	0	0	0	0	0	0
TOTAL	1,680	5,271	66	3,722	141	367

TABLE 4-2 (CON'T)
SOLID WASTE DIVERSION BY PROGRAM AND MATERIAL TYPE

	Paper Dealer	Transfer Station	Waste Hauler	Tree Service	TOTAL
Corrugated	127	31	2,241	0	6,331
Mixed	0	159	458	0	1,239
Newspaper	0	0	0	0	670
Ledger	42	10	300	0	527
Other	0	1	0	0	241
TOTAL PAPER	169	201	3,000	0	9,008
Containers	0	0	0	0	0
PET	0	0	0	0	18
HDPE	0	0	0	0	72
Film	0	0	0	0	0
Polystyrene	0	0	0	0	0
Other	0	0	0	0	0
TOTAL PLASTICS	0	0	0	0	90
CRV	0	1	52	0	554
Other recyclable	0	0	176	0	250
Other non-recyclable	0	0	0	0	0
TOTAL GLASS	0	1	227	0	804
Aluminum Cans	0	0	60	0	204
Tin Cans	0	0	0	0	0
Ferrous	0	33	71	0	3,883
Non-Ferrous	0	1	71	0	291
White Goods	0	0	0	0	0
Other	0	0	123	0	123
TOTAL METALS	0	34	326	0	4,502
Grass/Leaves	0	0	0	0	0
Prunings	0	0	0	184	184
TOT. YARD WASTE	0	0	0	184	184
Food	0	0	0	0	60
Wood	0	0	360	0	1,100
Tires	0	0	0	0	0
Diapers	0	0	0	0	0
Textiles and leather	0	0	0	0	0
Other Organics	0	0	0	0	0
TOT. O. ORGANICS	0	0	360	0	1,160
Inerts	0	0	0	0	0
Hazardous Wastes	0	0	0	0	0
Miscellaneous	0	0	0	0	0
TOTAL O. WASTES	0	0	0	0	
TOTAL	169	236	3,913	184	15,749

4.2.3 Future Status of Programs

There are no recycling programs or facilities in the City, or the area serving the City, that are expected to decrease in scope or to be phased out during the short- and medium-term planning periods.

4.3 PROGRAM ALTERNATIVES

This section identifies and evaluates alternative programs for recycling.

4.3.1 Identification of Alternatives

Table 4-3 identifies and provides a listing of alternatives for recycling that were originally considered by the City for the targeted materials. Complete descriptions can be found in Appendix D.

4.3.2 Evaluation of Alternatives

4.3.2.1 Evaluation Methodology

Using the evaluation methodology described in Section 1 and presented in full in Appendix A, alternatives were short-listed and then fully evaluated. Section 4.3.2.2 presents the results of the evaluation.

4.3.2.2 Results of Evaluation

Preliminary Evaluation. Preliminary evaluation of the identified alternatives did not eliminate any except that there are no landfills to conduct salvage. The Commerce Refuse to Energy Facility (CREF) could conduct a feasibility study regarding a modification of its operation to include salvaging. It is noted that the Joint Powers Authority (JPA) arrangement covering the CREF provides for all waste collected for disposal to be delivered to the transformation facility.

Table 4-3
Program Alternatives

Alternative	Waste Stream Application
Material Collection	
1- Curbside collection of separated materials	Residential
2- At-source separation and collection of recyclables	ICI
3- Mobile/stationary buy-back centers	Residential
4- Mobile/stationary drop-off centers	Residential
5- Multifamily collection	Residential
Materials Processing	
6- Manual materials recovery operations	Residential/ICI
7- Mechanized materials recovery operations	Residential/ICI
8- Salvage at solid waste facilities	Residential/ICI
9- At-source processing	ICI
Supportive Policies	
10- Mandatory materials separation ordinance	Residential/ICI
11- Ban on disposal of designated recyclables	Residential/ICI
12- Policy on scavenging	Residential/ICI
13- Zoning code practices	ICI
14- Building code changes	ICI
15- Business permit requirement	ICI
16- Mandatory recycling service provided by hauler	Residential/ICI
17- Contracted or franchised recycling service provision	Residential/ICI
18- Cooperative marketing	Residential/ICI
19- Procurement practices	Residential/ICI
20- Changing existing rates	Residential
21- Financial incentives	Residential/ICI
22- Educational outreach and technical assistance	Residential/ICI
23- Green waste cover project	

(1) ICI - Industrial, commercial, and institutional sources

Full Evaluation. A full evaluation was performed on the 23 alternatives. This full evaluation yielded a matrix of results based on 18 selected criteria that are identified in Section 1 and Appendix A. Table 4-4 tabulates the results of the full evaluation. Appendix D presents the rationale for qualitative evaluation of each alternative by criterion.

In order of preference, the alternatives are as follows:

- Alternative 2 - At-source separation/collection
(commercial/industrial sources first)
- Alternative 9 - At-source processing (commercial/
industrial sources)
- Alternative 8 - Salvage at planned solid waste facilities or
transfer stations
- Alternative 6 - Manual materials recovery facility (MRF)
- Alternative 7 - Mechanical materials recovery operation
(rail haul-type, solid waste facilities)
- Alternative 1 - Curbside collection in the residential sector
for single-family homes (now in phased
operation)
- Alternative 5 - Collection service for multifamily dwellings
- Alternative 16 -Requirement for the hauler to provide a
recyclable collection service to all
businesses
- Alternative 19 -Policy for City and businesses for the
procurement of products containing
materials with specified recyclable content
- Alternative 17 -Contracted or franchised recycling service
provision
- Alternative 22 -Educational outreach and technical
assistance
- Alternative 12 -Scavenger policies
- Alternative 18 -Marketing development
- Alternative 23 -Green waste cover project

TABLE 4-4

Recycling Evaluation Matrix

ALTERNATIVES: 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23

COST EFFECTIVENESS

Short Term Cost	M	H	M	M	L	M	L	H	M	L	L	M	M	M	M	M	M	H	L	H	L	M	H
Medium Term Cost	M	H	M	M	L	M	M	H	M	M	M	M	M	M	M	M	M	H	L	H	L	M	H
Waste Reduction Effectiveness	H	M	M	L	M	M	H	L	M	H	H	M	M	M	H	H	H	M	M	H	H	M	H
Ease of Financing	M	H	H	H	M	M	M	H	H	NA	NA	NA	NA	NA	NA	NA	L	NA	L	H	L	H	H

TECHNICAL EFFECTIVENESS

Potential Hazards	H	H	M	M	M	M	M	L	M	NA	M	H	H	H	H	M	M	H	NA	M	H	H	M
System Flexibility	M	H	M	M	L	H	L	H	M	M	L	L	L	L	L	M	L	H	H	H	H	H	H
Shift in Waste Generation	M	M	M	M	M	M	M	M	M	M	H	M	M	M	H	M	M	M	H	H	M	M	M
Technical Reliability	H	H	H	H	M	M	M	H	H	H	H	M	M	M	M	H	H	H	NA	M	M	M	H
Equipment and Personnel Availability	M	HH	H	H	M	M	L	H	H	H	H	H	H	H	H	M	H	H	NA	H	H	L	H
System Compatibility	H	H	H	H	H	H	H	H	H	M	M	M	H	H	H	H	M	H	L	M	L	H	M

INSTITUTIONAL RISK IMPACT

Institutional Barriers	H	H	M	M	M	H	H	H	H	M	M	H	M	M	H	M	H	M	L	M	M	H	M
Local Policy Consistency	M	H	H	H	M	H	H	H	H	M	M	H	M	H	H	M	M	M	M	M	M	H	H
Facility Requirements	L	H	M	M	M	L	L	H	H	H	H	H	H	H	H	H	H	M	H	H	M	M	H
Short and Medium Term Implementability	H	H	H	H	M	H	M	H	H	H	H	H	M	M	M	M	H	M	H	H	M	H	H
Market Conditions	H	H	H	L	M	M	M	H	H	NA	M	NA	NA	NA	NA	NA	M	H	M	NA	H	NA	H
Public Acceptability	H	H	M	M	M	M	M	H	H	M	M	H	M	H	H	H	H	H	H	M	M	H	H
Private Acceptability	H	H	H	H	M	H	H	H	M	M	M	H	H	L	L	M	L	H	M	M	H	H	H
Private Sector Participation Potential	H	H	H	M	H	H	H	M	H	H	H	NA	H	H	H	H	M	H	H	H	H	H	L

4.4 PROGRAM SELECTION

Using information from the local conditions survey, the waste diversion survey, goals and objectives, waste generation characteristics, and other considerations, Alternatives 1, 2, 5, 6, 7, 8, 9, 12, 15, 16, 17, 18, 19, 22, and 23 were selected and configured into the diversion program consisting of collection and processing activities, and supportive policies as described in the following sections.

4.4.1 Program Description

The primary focus is to develop a program that 1) enhances the performance of CREF, and 2) targets the largest waste generating sectors of the City (i.e., businesses) in the short term. However, the existing curbside collection program will be continued and augmented. Recycling can play a role in improving the efficiency of the CREF by diverting noncombustible materials away from the facility. This will decrease ash and increase the calorific content of the refuse. The following identifies each alternative selected, the rationale for selection, and discussion about implementation.

4.4.1.1 Short-Term Planning Period Alternatives

Existing Programs. Existing programs for collection will be continued throughout the short term with little or no change.

The City's recovery effort is considered crucial because the City must set a good example for businesses from which the City is asking for voluntary compliance. The existing program will be expanded by the end of 1992, and will be aimed at all City divisions and facilities with the most office workers. Employee and division-head orientation and training sessions will be geared to making recovery in the office and at City facilities a habit for City employees. The City plans to expand its pilot scale curbside collection residential service to all single-family and multifamily residences.

New Programs. New programs consist of: 1) the development and initiation of an at-source separation/collection program (business-wide materials recovery program) (Alternative 2), 2) the development and implementation of various supportive policies (Alternatives 12, 15, 16, 18, 19, and 22), and 3) the development of a materials recovery operation at CREF (Alternatives 6 and 7). Alternative 23 will be utilized as a contingency measure, if necessary.

At-source separation/collection programs for businesses (Alternative 2) are important because these sources contribute 92% of wastes currently disposed. It is expected that the local haulers will be required to provide services to businesses interested in separating and recovering recyclable wastes. The City plans to promote waste recovery to businesses by 1992 in order to increase diversion of the targeted types of recyclables from disposal and to effect improvement in the CREF operation by removing noncombustible recyclable materials such as glass and cans. Technical assistance to the private sector will be made available through the City concurrent with development of this program alternative.

The specific supportive policies to be implemented in the short-term planning period include: 1) an antiscavenging policy or ordinance; 2) an ordinance requiring the hauler to provide recycling services to any business requesting it; 3) a policy encouraging the purchase and utilization of products containing recycled materials; 4) an outreach/technical assistance program for residents and businesses; 5) an ordinance requiring area businesses to recycle and to submit specific plans governing their recycling at the time of their permit renewal or new application; and 6) development of a market zone to encourage the emergence of recycling industries; LACSD's alternative cover program will be utilized as a contingency measure only.

Scavenging (Alternative 12) can be controlled by current state law (Public Resources Code Section 41950) that prohibits the removal of recyclables by unauthorized persons. A scavenging policy is recommended as the cost of the program will be off-set by the prevention of a potential loss of revenue. It is important to note that enforcement, the types of deterrents used, and encouragement of public reporting are essential to a successful antiscavenging policy. This policy should be enacted early in the short-term planning period.

An ordinance, or a change in the franchise agreements, can be developed that requires haulers to provide recycling collection (Alternative 16). The ordinance or agreement should stipulate what materials will be collected, the frequency of collection, whether an incentive to recycle should be provided, the enforcement mechanism, and the payment system or compensation to the hauler. Any mandatory service requirement should have a clear standard of what constitutes reasonable service. This alternative is selected because there needs to be some guarantee that businesses can obtain collection for recyclables at a reasonable cost.

As a means to encourage market development, the City can enact a policy encouraging the purchase and utilization of products containing recycled materials (Alternative 19). This will address in a small but significant way the real necessity to educate the business community and residents as to the importance of market development to sustain existing and projected recovery rates.

An ordinance requiring businesses to recycle (Alternative 15) and to submit specific plans on an annual basis can be enacted. This alternative would have the benefit of addressing the largest sector for waste generation, and placing the financial burden on that sector rather than the residents.

An integral aspect of the diversion system must be an outreach and technical assistance program (Alternative 22) for residents and businesses on matters of recycling. The City can conduct workshops and give technical assistance to haulers, businesses, recycling companies, and residents on such aspects as setting up collection and marketing programs, or developing a waste exchange. It may also involve giving the audience a forum to allow for sharing of information and for expressing concerns. Through outreach activities, the City can acquire input from concerned parties before changes in regulations are made.

For the collection and diversion programs anticipated in the short-term planning period, it is expected that technical assistance may include training for generators on self-audits for waste, a discussion of how to meet service level requirements, and presentations targeted to specific industry sectors. It is expected that this outreach program can be coordinated with source reduction and composting outreach efforts.

Designation of the City as a market development zone (MDZ) (Alternative 15) to encourage the emergence of recycling industries is considered to have some application, given the industrial character of the City. The City will review and perhaps apply for designation as a MDZ by July 1991. The City will consider joining with adjacent communities in applying for this designation to increase the potential beneficial impact of the MDZ.

4.4.1.2 Medium-Term Planning Period Alternatives

In the medium term, the City will attempt to increase recycling but will add the potential diversion available from transformation (10% credit). To aid in improving the CREF performance, emphasis in the medium term may

include a materials recovery facility, if economics and siting allow. In the Special Waste Component (Section 6), the output ash from the CREF will be evaluated for potential utilization. Given the large percentage of generated waste that ash represents (approximately 18%), ash diversion may represent an important option for the City to achieve 50% diversion.

The City will encourage private haulers to utilize the County Sanitation District's yard waste alternative cover program for landfills (Alternative 23), if this alternative is deemed necessary and the legislation has found this alternative to be a viable diversion mechanism. This is advantageous to the City since it is low in cost and can divert considerable material.

In addition, the City will provide for the expansion of separate collection in all generating sectors and attempt to expand procurement of products with recycled material content.

4.4.2 Estimated Diversion Quantities

Table 4-5 provides estimates of the types and quantities of solid waste to be diverted from disposal by the selected new alternatives (excludes existing programs). The total projected diversion for all the new alternatives combined is 3,356 tons per year in the short term (by 1995) and 17,505 tons per year in the medium term (by 2000).

These tonnages, using projected generation rates for 1995 and 2000, will add 3.5% diversion in the short term and 17.9% in the medium term.

Table 4-5

Estimated Diversion for Selected Alternatives

Alternatives	Materials	Diverted ST⁽¹⁾ (tpy)	Diverted MT⁽²⁾ (tpy)
1,5 - Expanded residential curbside collection (Single-family and multifamily)	Glass (CRV), glass (other), newspaper, plastics, aluminum, and mixed paper	450	618
2- At-source collection (City and Business Recovery Programs)	Glass (CRV), glass (other), plastics, ferrous, aluminum, and wood	2,906	5,157
6,7- Material recovery operation	Glass (CRV), glass (other), newspaper, plastics, aluminum, mixed paper, and wood	NA	1,961
Transformation ⁽³⁾	CREF	NA	9,769
Totals		3,356	17,505

(1) ST=Short-Term Planning Period (see Appendix D-2).

(2) MT=Medium-Term Planning Period (see Appendix D-2).

(3) Based on 10% of 97,690 tons generated per year.

4.4.3 Anticipated End Users of Recycled Materials

The waste diversion study identified a number of end users for the materials diverted by the selected alternatives. For the targeted materials, markets are generally strong in Southern California, due to the presence of strong export buyers and available local end users. In fact, much of the material collected in San Diego and Arizona must be routed through Los Angeles Port facilities, yielding a competitive marketing advantage to locally derived materials. Exportation plays a key role in the local marketplace with its capacity to decrease volatility in often-fluctuating markets.

Each targeted material is described below, indicating the status of the current markets, and if a problem is indicated, identifying the marketing strategy to move the diverted materials.

4.4.3.1 Wastepaper Grades

There are a wide variety of wastepaper dealers and consuming mills in the Los Angeles area, as well as access to Pacific Rim markets. These remain accessible to materials diverted from the City. There is also considerable future capacity being constructed for the de-inking of newspaper. Construction markets remain depressed, which may lower the value of mixed papers. Mixed papers will not be collected in the short term in order to assess the future capacity of the marketplace to accept these fibers.

4.4.3.2 Glass Containers

A traditionally stable market, the glass market has experienced recent downturns in market price due to oversupply. There is recent legislation in California mandating increased usage of glass in containers, but this has yet to spur construction of additional capacity. However, Southern California is home to a number of glass-container producers; therefore, the effect of oversupply is less pronounced in the area. Other outlying areas may experience greater dislocation than that experienced by the City. Specifically, Wellman/California CRINC operates a benefaction facility in the City limits, and furnishes cullet to local glass manufacturers.

4.4.3.3 Metals

Tin cans are purchased for de-tinning by Proler International, with a new plant in Houston, Texas and a plant in Lathrop, California. There are strict specifications, and prices are normally low compared with other metals. At present, there is an adequate market for the material, but care will be exercised by the City to gauge the progress of new capacity and pricing relative to oversupply. It is projected that the aluminum market will remain strong based primarily on its past performance.

4.4.3.4 Plastics (PET and HDPE)

There is a developing market for plastics, but at this time it is insufficient to absorb all potentially collected materials. Waste Management, Inc. and DuPont are slated to build PET recycling facilities in Southern California. The City will monitor this situation very closely and act to develop key marketing arrangements with the potential buyers so as to confirm demand for materials prior to collection program startup.

4.4.3.5 Yard Wastes (Prunings)

The market for this specialty product is strong in Southern California. There are at least nine major buyers of wood shavings and chippings in the area. In addition, there is a large yard waste processing facility owned and operated by United Pacific Corporation (UPC) which is located in Santa Fe Springs. The throughput capacity of the facility is 1,500 tons per day. Incoming yard waste is screened to remove contaminants, size reduced, then transported to the company's composting facility near Bakersfield. Compost products are then backhauled to Los Angeles. Also, the Los Angeles County Sanitation District (LACSD) plans to use chipped yard waste. It is anticipated that there will not be a glut or softening of the market for yard wastes in the short- or medium-term planning periods.

4.4.4 Methods of Handling Materials

Methods for handling materials would be standard operating methods currently used by private sector recyclers. In the City wastepaper recycling operation, City workers would separate high-grade office wastepaper from other wastes in desktop containers. These containers would be emptied into centralized containers by office workers during the routine of traveling within the office. These central barrels would be emptied by janitorial staff on an as needed basis into larger 1- or 3-cubic-yard bins placed at strategic locations on loading docks. These would be collected by material buyers or haulers, depending on the type of contract and award.

4.4.5 Facility Needs

At present, there are no anticipated future facility requirements to handle additional volumes of material in the City. It is expected that the CREF will be modified to allow materials recovery on or near the tipping area.

4.5 PROGRAM IMPLEMENTATION

Implementation of the recycling diversion program alternatives is discussed below including the following information: responsible parties, implementation tasks, implementation schedule, and costs and revenues.

4.5.1 Identification of Responsible Parties

The program will be administered and implemented by the Community Development Department.

Private sector recycling projects will be coordinated under the general direction of the Community Development Department as stipulated by the needs and requirements of complying with AB 939. Each project will be the responsibility of the individual or corporation, but all applicable permits and applications must be recorded with the Commerce Community Development Department.

Ordinances and policies may be drafted by the City Attorney, but will be initiated and reviewed by the Community Development Department. Procurement will be coordinated by the Finance Department, which also has broad oversight responsibility for the execution of all purchasing.

The implementation requires one-quarter time from new positions of Solid Waste Technician and a clerk/typist.

4.5.2 Implementation Tasks and Schedule

The tasks and schedule for implementing the recycling diversion program are identified in Table 4-6.

4.5.3 Implementation Costs

Table 4-7 summarizes the estimated costs to implement the various programs within the short-term planning period (1991 dollars).

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Table 4-6

Implementation Tasks and Schedule

Alternative	Task	Planning ⁽¹⁾ Period	Start Date	Completion Date	
1,5-Curbside/Multi-family Collection	• Work with hauler to devise program	ST	underway	7/92	
	• Request bid price	ST	7/92	12/92	
	• Implement contract or agreement	ST	1/93	12/95	
2-At-source separation and collection of recyclables	• City recovery program	• Review and augment existing program	ST	1/92	6/92
		• Training of staff	ST	1/92	6/92
		• Purchase equipment	ST	3/92	6/92
	• At-source recycling service to all area businesses	• Review opportunity with hauler	ST	1/92	6/92
		• Provide outreach/technical assistance	St	7/92	12/95
	• Expand recycling	• Review opportunity with hauler	MT	1/96	6/96
		• Provide outreach/technical assistance	MT	12/96	12/99
	6,7-Materials recovery facility	• Assess feasibility	ST	1/93	12/93
		• Conduct or supervise CREF siting investigation	ST	1/94	12/94
		• Modify CREF for MRF operations	MT	1/96	12/97
12-Policy on scavenging	• Evaluate need for ordinance	ST	1/92	3/92	
	• Draft and enact ordinance	ST	3/92	6/92	
15-Business permit requirement	• Develop potential ordinance and enact	ST	1/92	6/92	
	• Develop planning assistance and filling forms for recycling plans	ST	6/92	12/92	
	• Set fee structure	ST	12/92	6/93	
	• Review business plans	ST	6/93	12/95	

(1) ST = Short-Term Planning Period
MT = Medium-Term Planning Period

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Table 4-6
Implementation Tasks and Schedule (Cont.)

Alternative	Task	Planning ⁽¹⁾ Period	Start Date	Completion Date
16-Mandatory recycling service provided by hauler	• Evaluate need for ordinance	ST	2/92	6/92
	• Draft and enact ordinance	ST	6/92	12/92
17-Contracted or franchised recycling service provision	• Review need	ST	1/92	3/92
	• Develop bid package	ST	3/92	4/92
	• Request bids	ST	6/92	10/92
	• Evaluate bids and accept bidder	ST	10/92	12/92
	• Develop contract and contract conditions	ST	12/92	3/93
18-Cooperation marketing	• Review markets	ST	1/92	12/92
	• Lobby for market expansion	ST	1/92	12/95
	• Discuss MDZ with adjoining cities	ST	1/92	2/92
	• Prepare application to the CIWMB	ST	1/92	3/92
19-Procurement practices	• Review existing policies and practices	ST	1/92	6/92
	• Develop a policy on procurement	ST	6/92	3/93
	• Revise bid specifications, if necessary	ST	3/93	6/93
	• Remove institutional barriers	ST	6/93	12/95
22-Educational outreach/technical assistance	• Design and conduct educational and outreach program	ST	6/92	12/92
Monitoring and Evaluation		ST,MT	1/92	12/95

- (1) ST = Short-Term Planning Period
MT = Medium-Term Planning Period

Table 4-7

Recycling Implementation Costs

Alternative	Capital/Startup Costs (\$)	Annual Costs (\$)
1-Curbside Collection	20,000 ⁽¹⁾	86,000 ⁽²⁾
2-At-Source Separation and Collection of Recyclables	0	0
5-Multifamily Collection	7,200 ⁽³⁾	31,000 ⁽⁴⁾
6/7-MRF Development (MT)	1,000,000 ⁽⁵⁾	48,750 ⁽⁶⁾
Various Supportive Policies	0 ⁽⁷⁾	0 ⁽⁷⁾
Administration, net-working, coordination, planning (all alternatives)	0	28,000 ⁽⁸⁾
Monitoring and Evaluation	0	17,000 ⁽⁹⁾
Total	\$1,027,200	\$210,750

(1) Based on 2,470 HHs. \$8/container

(2) Based on \$2.90/HH/month, 2,470 HHs

(3) Based on \$8/container, 900 HHs

(4) Based on \$2.90/HH/month, 900 HHs

(5) Estimated cost for 50 ton per day MRF, manual recovery operations; \$20,000/installed ton (medium term only)

(6) Based on \$25/ton processing charge, 7.5 tons/day, 260 days per year (medium term only).

(7) Costs included with other "action" alternatives

(8) Based on \$70,000 annual salary each, 2 staff, 20% FTE

(9) Based on \$70,000 annual salary each, 2 staff, 5% FTE; plus \$10,000 for waste studies, etc.

4.6 MONITORING AND EVALUATION OF PROGRAMS

4.6.1 Monitoring Methods for Objectives

The following are the methods to be used to quantify and monitor achievement of the objectives of the various diversion programs, including diversion from solid waste landfills and transformation facilities and reduction of waste hazards:

- Require the hauler to keep records of amounts of waste disposed by residents and businesses
- Arrange with the hauler to provide commercial and industrial sources with a reporting device by which they can keep records of all diversion activities
- Provide incentives for sources to engage in these types of reporting activities (fines for noncompliance)
- Keep records of attendance at all educational programs and events and follow up those events by leaving survey forms for participants to return to determine if they were engaging in the type of activity promoted by the event
- Review bid responses to determine if bid specification revisions have resulted in desired responses
- Review annual purchases to determine if City has increased its purchase of recycled products

4.6.2 Diversion Programs Monitoring

Either one or both of the following methods shall be used to monitor implementation of the various diversion programs and to evaluate their effectiveness:

- Targeted waste characterization studies involving a representative sampling of generator sites or solid waste facilities to measure changes in the volume, weight, and hazard of specific wastes

- An assessment of any changes in the design, production, distribution, sale and/or use of targeted materials which would affect waste generation

The City will evaluate various written mechanisms by which the monitoring information will be obtained and reviewed. Such mechanisms will be selected once the implementation of the alternatives is underway.

4.6.3 Monitoring Information

The sections below provide information regarding the specific monitoring and evaluation methods selected for the various diversion programs.

4.6.3.1 Criteria

The general criteria to establish effective implementation of the program will include:

- The measured reduction of the material to landfill
- The measured increased diversion of material to other sectors

4.6.3.2 Responsibility

The City's Community Development Department will be responsible for monitoring of the programs.

4.6.3.3 Costs

Monitoring and evaluation costs are included in Table 4-8.

4.6.3.4 Contingencies

The following measures will be implemented in the event that diversion objectives are not attained:

- Increase level of effort and frequency of public information
- Add or accelerate mandatory aspects of program alternatives
- Add the alternative cover project (Alternative 23) as a regular recycling alternative

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Contingency measures will be implemented on an "as-needed" basis following the City's annual review of the progress towards meeting the diversion mandates (in connection with preparing the required reports to the County and State).

5 COMPOSTING COMPONENT

5 COMPOSTING COMPONENT

Composting, as defined by AB 939, is the "process whereby organic material in the waste stream biologically decomposes under controlled conditions." Decomposition is caused by microorganisms that use the organic material in the waste as a food source. The metabolic activity of these microorganisms changes the chemical composition and physical characteristics of the waste and generates heat as a by-product. Although certain conditions must be controlled and maintained to ensure efficient composting, the actual process occurs naturally. Composting should not be confused with recycling.

The rate of decomposition is highly variable and depends upon a number of factors. They include: 1) the type of waste, 2) whether the process is aerobic (requires oxygen) or anaerobic (does not require oxygen), 3) the temperature, 4) the nutrient content of the feedstock, 5) the moisture content, 6) the respiration rate, and 7) the pH. Depending on conditions, decomposition can take up to 3 years to complete. By carefully designing the process, the rate of decomposition can be accelerated and may be completed in as little as 6 weeks.

According to AB 939 and the California Integrated Solid Waste Management Board, only organic waste that has been source separated, or can be separated from mixed solid wastes (otherwise known as municipal solid wastes—both terms will be used interchangeably) at a processing facility, may be counted for credit under composting toward the diversion goals of 25% by 1995 and 50% by 2000. Composting organic wastes at the source of generation, such as backyard composting or on-site composting of process residues, are counted for diversion credit under source reduction. The production of secondary organic materials, such as mulch, wood chips, or refuse derived fuel (RDF), may be counted for diversion credit under recycling.

This component includes a statement of objectives for the City of Commerce, a description of existing conditions, an evaluation of program alternatives, an implementation plan, and a monitoring and evaluation program.

5.1 OBJECTIVES

5.1.1 Short-Term Objectives

The following objectives are specifically for the short-term planning period:

- Collect, process, and compost 5% of the total yard waste generated per year by 1995, by:
 - Encouraging separate yard waste collection by mid 1992 for area residences whereby yard waste is picked up and taken to a centralized composting area
 - Encouraging yard waste collection by the end of 1992 for parks, schools, and governmental entities in the area whereby yard waste is taken to a centralized composting area
 - Enacting an ordinance that may require all area landscaping and gardening services to take yard waste to a centralized composting area
 - By 1993, encouraging local schools, parks, and other governmental entities with landscaping needs to purchase composted materials
- Develop model procurement guidelines for private businesses by 1995.

5.1.2 Medium-Term Objectives

The following objectives are specific for the medium-term planning period:

- Collect, process, and compost 10% of the total yard waste generated per year by 2000.
- Investigate the potential of implementing a mixed solid waste composting facility by 1997 or sooner.
- Implement market development activities including mandatory procurement goals by 2000.

5.1.3 Targeted Materials

Based on the results of the SWGS, the City's disposal waste stream contains the amounts of compostable organics listed in Table 5-1.

Table 5-1

Availability of Targeted Organic Wastes

Waste Type	Tonnage Available	
	ST	MT
Yard Waste	3,328	3,418
Food Waste	7,246	7,443
Other Organics	885	910
Total	11,459	11,771

Most of the organic fraction of the yard waste and mixed solid waste is suitable for diversion to either yard waste or mixed solid waste composting programs. The quantity of yard wastes and other organics generated varies significantly over time as a result of demographic changes, climatic conditions, soil conditions, gardening practices, and many other factors.

While yard wastes compose only a small percentage (4.4%) of the overall waste stream being disposed, the City plans to target all types of yard wastes, including brush, leaves and prunings in order to accomplish the stated diversion objectives. Factors impacting yard waste generation, such as drought, xeriscaping, and backyard composting, may impact the amount of waste that may be delivered to composting facilities.

5.2 EXISTING CONDITIONS

5.2.1 Existing Programs

Although there was a minor amount of yard waste (184 tons per year of tree trimmings) reported as being diverted by a local tree service company there are documented operating composting programs in the City. There is an existing private yard waste processing facility owned and operated by United Pacific Corporation (UPC) which is located in Santa Fe Springs, a nearby City. The capacity of the facility is estimated at over 1,500 tons per day (450,000 tons per year) and has a peak capacity of 3,000 tons per

day on an intermittent basis. Incoming yard waste is screened to remove contaminants, size reduced, and then transported to the company's composting facility near Bakersfield. Compost products are then back-hauled to Los Angeles. UPC is currently evaluating plans to open additional yard waste receiving and processing centers throughout the Los Angeles Basin that would increase their total processing capacity to well over 1,000,000 tons per year.

Currently, there are no significant existing mixed solid waste composting operations within the City and no significant quantities of organics, within the MSW generated locally, are being diverted to other regional programs.

5.2.2 Quantities of Waste Diverted

Based on the waste composition study conducted in conjunction with the preparation of this plan, approximately 184 tons of yard waste were diverted from disposal by a local tree maintenance company by composting activities during 1990.

5.2.3 Future Status of Existing Programs

It is anticipated that existing programs will be continued or expanded during the short and medium terms.

5.3 PROGRAM ALTERNATIVES

5.3.1 Identification of Alternatives

Program alternatives are identified in Table 5-2 and are fully discussed in Appendix E. The alternatives have been divided into four general categories: 1) collection, 2) preprocessing, 3) composting, and 4) supportive policies.

Table 5-2
Composting Component Alternatives

Alternatives	Waste Stream Application (1)
Collection	
1- At-source collection	R,ICI
2- Self-haul drop-off	R,ICI
Preprocessing	
3- Decentralized preprocessing and materials storage	R,ICI
4- Centralized preprocessing and materials storage	R,ICI
Composting	
5- Yard waste composting	R,ICI
6- Mixed solid waste composting	R,ICI
Supportive Policies	
7- Promotion and education	R,ICI
8- Financial incentives	R,ICI
9- Regulatory measures and policies	R,ICI

(1) R=Residential Sector; ICI=Industrial, Commercial, and Institutional Sector

5.3.2 Evaluation of Alternatives

Pursuant to AB 939 Sections 18733.3(a)(1)-(6), 18733.3(b)(1)-(4), and 18736.3, each alternative was evaluated based on the following criteria:

- Effectiveness in reducing waste quantity
- Absence of hazards
- Flexibility
- Limited shift in waste type generation
- Implementability
- Facility needs
- Consistency with local policies
- Absence of institutional barriers

- Estimated cost rating
- End uses
- Technical reliability
- System compatibility
- Public acceptability

Each alternative was assigned a high (H), medium (M), or low (L) rating based on an assessment of how well that alternative met each criterion. Table 5-3 presents the results of the evaluation. A few observations can be made regarding these reports:

- Yard waste composting has lower total program costs and is easier to implement than mixed solid waste composting.
- Self-haul by generators is less effective than curbside collection in effecting diversion of targeted waste; however, curbside collection is much more expensive.
- Centralized collection, storage, preprocessing, and composting sites are generally subjected to greater permitting and siting constraints versus centralized, small sites (e.g., neighborhood locations).
- Yard waste collection is already practiced in nearby cities, and is a proven technology:

5.4 PROGRAM SELECTION

The results of the evaluation were compared against local conditions, primarily, and secondarily, against goals and objectives and the SWGS. The local conditions that most influenced the selection of alternatives included:

- existing diversion rate
- quantity of yard waste currently disposed
- yard size for single-family housing
- population density

Table 5-3
Evaluation Results

Criteria	Collection		Preprocessing		Compost		Support Measures		
	Self Haul	At-Source	Decen- tralized	Cen- tralized	Yard Waste	MSW	Promotion/ Education	Financial Incentives	Regulatory Measures
Effectiveness in reducing waste quantity	H	H	H	M	H	H	M	H	H
Absence of hazards	M	M	M	M	M	M	N/A	N/A	N/A
Flexibility	M	M	M	L	H	L	H	M	L
Limited shift in waste type generation	M	M	M	M	M	L	M	M	M
Implementability	M	H	M	M	H	L	H	M	L
Facility needs	H	M	M	M	H	L	N/A	NA	NA
Consistency with local policies	M	H	H	M	H	M	H	M	L
Absence of institutional barriers	H	H	M	M	H	M	H	M	L
Estimated costs rating	H	L	H	M	H	L	H	M	L
End uses	N/A	N/A	M	M	H	M	N/A	N/A	NA
Technical reliability	H	H	H	H	H	H	N/A	N/A	N/A
System compatability	M	H	H	M	H	L	H	M	M
Public acceptability	H	H	H	H	H	H	M	M	NA

Final alternatives were then selected and configured into a potential program by focusing on 2 of the 13 criteria:

- waste diversion effectiveness unless cost or institutional barriers were identified
- potential for private sector participation

This is because 1) the CCR Title 14 regulations stipulate that program selection should consider private sector participation potential and, 2) that diversion is among the most important goals of the AB 939 program.

5.4.1 Program Description

In the sections below, each planned alternative is described and then its selection is justified. The following alternatives have been selected for the short-term planning period:

- Alternative 2 - Self-Haul Drop-Off
- Alternative 3 - Decentralized Preprocessing and Material Storage
- Alternative 5 - Yard Waste Composting
- Alternative 7 - Promotion and Education
- Alternative 9 - Regulatory Measures and Policies

These alternatives will be continued through the medium-term planning period. In addition, Alternative 8, Financial Incentives, will be implemented in the medium term.

Voluntary participation and private sector ownership and operation will be encouraged over public sector initiative and mandatory compliance in the short term. This may change in the medium term if a diversion shortfall exists, necessitating more regulation and public sector initiative. Importantly, mixed solid waste processing is to be reserved only as a contingency mechanism due to significant costs and projected difficulties in implementation. The alternatives composing the composting program are described in sections 5.4.2 and 5.4.3.

5.4.2 Existing Programs

Existing programs are expected to be continued or expanded during the short- and medium-term planning periods.

5.4.3 New Programs

5.4.3.1 Alternative 2 - Self-Haul Drop-Off

During the short term, voluntary commercial and residential self-haul will be encouraged as the primary means of collection of yard wastes. The alternative was selected because it presents a low capital and operating cost to the City, targets all generators if appropriate information is disseminated, and promotes private sector participation.

During the medium term, this alternative will be expanded through the enactment of supportive policies described in sections 5.4.3.4 through 5.4.3.6. If warranted, at-source collection (Alternative 1) will be considered for implementation under contingency measures.

5.4.3.2 Alternative 3 - Decentralized Preprocessing and Material Storage

Decentralized preprocessing and materials storage (DPMS) sites will be developed and implemented during the short term to facilitate self-haul by generations. DPMS sites could be either public or private locations or facilities, sited within or near the City, possibly at existing or planned solid waste management facilities (transfer stations or landfills) or material recovery facilities (MRFs).

This alternative is selected because of potential cost savings to self-haulers (avoiding long hauls) and easy implementation with self-haul efforts (makes participation easier and more convenient).

5.4.3.3 Alternative 5 - Yard Waste Composting

The City plans to use or to encourage private sector development of yard waste composting beginning in the short term. If necessary the City itself will undertake development of composting, but only as a contingency.

The alternative is selected because of the presence of available handlers and the ready supply of separated wastes.

5.4.3.4 Alternative 7 - Promotion and Education

The City plans to undertake the supportive policy of promotion and education to encourage maximum participation in composting from all sectors, beginning in the short term. The specific promotional and educational

matter is discussed in Section 7, Education and Public Information. The program alternative will continue in the medium term. It is selected mostly due to the need to maximize citizen and business participation.

5.4.3.5 Alternative 8 - Financial Incentives

Financial incentives is timed to be implemented in the medium term, as a measure to increase participation. The alternative actually consists of two possible policies:

- incentive rates (see Section 3, Source Reduction)
- fines for noncompliance

These will be implemented in a manner consistent with prevailing City conditions and abilities. It is selected since voluntary compliance may be inadequate to spur participation to the level required to reach diversion targets.

5.4.3.6 Alternative 9 - Regulatory Measures and Policies

During the short term, the City plans to enact supporting policies considered necessary to implement a successful composting program. These include, but are not limited to:

- business permit requirements to undertake composting or separation and collection of compostables
- public sector procurement guidelines
- technical assistance
- zoning ordinances and building code changes to facilitate siting and development

During the medium term, the City plans to undertake one of two measures:

- yard waste disposal bans
- mandatory source separation ordinance

Either policy will achieve the objective of maximizing available organic materials for composting.

Supportive policies are selected to buttress proposed and existing program alternatives at a least cost to the City.

5.4.4 Estimated Diversion Quantities

The proposed alternatives are anticipated to divert a total of 400 tons per year of yard waste during the short term (by 1995) and 430 tons per year during the medium term (by 2000). These tonnages will result in an additional diversion of 0.4% in both the short and medium term. Once implemented, the alternatives will meet the objectives of diverting 5% of yard waste in the short term and 10% in the short term.

5.4.5 Anticipated End Users

Based on existing markets for compost-related products, it is anticipated that all of the compost products produced will be utilized beneficially. Potential end uses for compost in the short-term planning period include: 1) local municipal use in parks, recreation facilities, landscaped areas, and roadways, 2) public use by homeowners, landscapers, and other commercial businesses, and 3) use by state and federal agencies within the region.

Anticipated markets for yard waste compost include a wide range of potential applications. In the short-term planning period, the City will develop and implement procurement guidelines for the preferential purchase and use of compost products. Private usage for landscape applications will also be developed based on the quality of the product and its suitability for the intended use. Model specifications for various types of applications will be developed to assure consistent quality and these specifications will be made available to the public via technical assistance efforts and public education. Certain specific problem yard wastes, such as eucalyptus, will need to be separated from the wastes intended to be composted. This will be accomplished using a combination of public education and collection employee training.

5.4.6 Material Handling

Since composting is a relatively recent phenomenon on the scale anticipated for the City, materials handling, storing, delivering, and disposing of compost are described in the subsequent sections.

5.4.6.1 Handling

There are no limitations on the handling methodologies that may be used for yard wastes intended for composting. If mixed solid wastes are used,

then materials should be handled carefully so as to avoid excessive compaction that might break glass in the wastes. This will assist in maintaining good quality standards and will reduce production costs.

5.4.6.2 Storage

Most composting programs store materials on-site in large curing piles. The quantity of stored composting and the duration it may be stored prior to sale depends greatly on the level of composting technology employed. Like other agricultural organic commodities, compost is subject to variations in supply and demand. Physical storage requirements will depend on the type of usage and seasonal climatic variations.

5.4.6.3 Delivery

Delivery of compost products will depend primarily on the type of end user. In the short-term planning period, bulk sales should be emphasized. Bagging of compost will expand the potential market, but will add cost to the operation. It is anticipated that bagging may be added in the medium-term planning period.

5.4.6.4 Residuals Disposal

Residuals from the composting of yard wastes may include such contaminants as rocks, screened items such as glass or plastic and yard wastes not suitable for composting, such as large stumps. Where possible, these contaminants will be recycled or processed into other reusable materials, otherwise they will be landfilled.

If the contingency of mixed solid waste composting is implemented, such a facility could include an integral resource recovery line. This recovery line would recover for recycling noncompostable materials or organic materials whose recovery would be a higher and better use than composting, such as high-grade paper. Residuals could include noncompostable inorganics and household hazardous wastes. The recovery rate and residual rate would be highly dependent on waste stream content. Residuals would be disposed in an appropriate landfill or transformation facility.

5.4.7 Facility Needs

In the event that facilities will be owned and/or operated by the City, the following sections present information addressing facility needs.

5.4.7.1 Collection

None required.

5.4.7.2 Preprocessing

There are several small composting and preprocessing operations throughout the entire region. The only large scale yard waste operation is located in Santa Fe Springs. No composting is conducted at this site; the materials are transported to a site near Bakersfield for composting. In general sites need to meet ten specific criteria for development as a preprocessing facility. These are:

- Vacant, flat land with a 1% to 8% slope.
- Open field except for buffer area and plantings.
- Sufficient size, approximately 1 acre per 50,000 to 80,000 loose cubic yards annually of material collected and processed.
- Low residential population density.
- Meets typical EIR criteria such as no wetlands, above the flood plain, no historic sites, and no endangered species.
- Good transportation access with minimal impact to existing transportation uses.
- Low water table, greater than 20 feet below the surface.
- Potential to develop visual buffer zone, if necessary.
- Availability of water and other related utilities on-site.
- No drainage problems.

Equipment needs include a hammer hog, tub grinder or other size reduction equipment, a front end loader, and transport trucks and trailers.

In the case of small neighborhood collection depots, most of these criteria are irrelevant. Only the 6th and 8th criteria would apply. Material would be stored in small enclosed bins.

5.4.7.3 Composting

In addition to the UPC facility it may be possible to develop composting sites at suitable locations. Such sites will need to meet the same ten criteria presented for a preprocessing facility with a slight area modification, (i.e., 1 acre per 5,000 to 8,000 loose cubic yards of material collected).

Equipment needs range from a hammer hog, tub grinder, or other size reduction equipment, and a front end loader for simple windrow composting, to an automated in-vessel digester and automated materials handling system.

5.5 PROGRAM IMPLEMENTATION

5.5.1 Identification of Responsible Parties

5.5.1.1 The City

The City Community Development Department (CDD) will be responsible for the overall coordination and administration of the local programs and will coordinate that effort with the County and private entities. The City's General Fund may be the funding source, for any needed capital to develop facilities or to implement programs, as appropriate. The Commerce Finance Department will coordinate the facilities' procurement process to obtain private development of facilities, if possible and consistent with public procurement regulations. Finally, the Public Information Office will design and coordinate the public education program.

5.5.1.2 Private Sector Collectors and Processors

Private haulers, gardeners, and landscape contractors and tree trimming contractors assume some responsibility in transporting yard waste and trimmings to a certified facility. Haulers will be responsible for working directly with residential and commercial customers to facilitate implementation of at-source programs and for monitoring and reporting to the City on diversion activities and program costs. The CDD will work with the private sector on such matters. Also, private facility owners and operators will be responsible for developing, constructing, and operating, if possible,

any major facility to accomplish the processing and composting of suitable organic waste material.

5.5.2 Short-Term Implementation Plan

The short-term implementation plan for the selected alternatives, including specific tasks, start and finish dates, and the parties responsible for implementation, is presented in Table 5-4.

Table 5-4
Short-Term Implementation Plan

Alternative (1)/Task	Start	Finish	Responsibility
Collection			
2- Self-Haul Drop-Off			
• Design collection system	1/93	6/93	Private haulers/ generators
• Implement collection system	6/93	12/93	Private haulers/ generators
• Alternative oversight	6/93	ongoing	CDD ⁽²⁾
• Develop incentive rates	7/93	12/93	CDD
• Add multiple drop-off sites		As required	CDD
• Develop mandatory business license provisions	1/94	6/94	CDD
Preprocessing			
3- Decentralized Preprocessing and Materials Storage			
• Develop programs and determine facility needs	1/93	3/93	Private sector
• Enact model zoning ordinance	2/93	7/93	CDD
• Procure facilities	1/94	6/94	Private sector
• Implement program	6/94	12/94	Private sector
Composting			
5- Yard Waste Composting			
• Develop program and determine facility needs	12/92	6/93	CDD/ Private sector
• Market survey	1/93	6/93	CDD
• Procurement guidelines	1/93	6/93	CDD
• Product quality standards	1/93	7/93	CDD
• Technical Assistance	1/93	12/94	CDD
• Procure facilities	12/93	6/94	Private sector
• Implement program	6/94	ongoing	Private sector
• Program monitoring and review	6/94	ongoing	CDD
Monitoring and Evaluation	ongoing		CDD

(1) Only includes technological alternatives. Supportive policies included as appropriate.

(2) Community Development Department (CDD).

5.5.3 Medium-Term Implementation Plan

The medium-term implementation plan for the selected alternatives, including specific tasks, start and final dates, and the parties responsible for implementation is presented in Table 5-5.

Table 5-5
Medium-Term Implementation Plan

Alternative (1)/Task	Start	Finish	Responsibility
Collection			
2- Self-Haul Drop-Off			
• Continue short-term program			
Preprocessing			
3- Decentralized Preprocessing and Materials Storage			
• Capacity	1/96	6/96	CDD
Composting			
5- Yard Waste Composting			
• Examine diversion of related wastes	1/96	6/96	CDD
• Develop/implement yard waste disposal bans	1/96	6/96	CDD
• Implement fines for illegal disposal	1/96	6/96	CDD
• Develop mandatory source separation ordinances	1/97	6/97	CDD
• Develop/implement punitive rate for non-compliance	1/98	6/98	CDD
Monitoring and Evaluation	ongoing		CDD

(1) Only includes technological alternatives. Supportive policies included as appropriate.

5.5.4 Implementation Costs

Yard waste program costs can include: 1) fixed costs such as program planning and development costs, including system planning, facility design, development and siting, enacting ordinances, and implementation of promotion/education programs; 2) fixed capital costs such as purchasing land and equipment for drop-off sites and composting facilities, and collection trucks for curbside collection (medium term); and/or 3) variable annual operating and maintenance costs, including labor and equipment operations, as well as City staff time to conduct administrative and promotion/education activities. These costs are summarized in Table 5-6.

Table 5-6
Composting Implementation Costs

Alternative	Capital Costs (\$)	Annual Costs (\$)
Development and Implementation	0	28,000 ⁽¹⁾
2- Self-Haul Drop-Off		
3- Decentralized Preprocessing and Materials Storage		
5- Yard Waste Composting		
Supportive Policies⁽²⁾		
Monitoring and Evaluation	0	17,000 ⁽³⁾
Total	0	\$45,000

(1) Assumes 18% (49 days) of staff time, \$70,000/year FTE, 2 staff

(2) Includes promotion and education, financial incentives and regulatory measures.

(3) Assumes 6% (16 days) of staff time, \$70,000/year FTE, 2 staff; plus \$10,000 for waste studies, etc.

Because of the variable and unpredictable market price for yard waste compost, processors typically charge a fee for tipping yard waste to cover the difference between revenues from the sale of products and operating costs. Under most circumstances, this fee should be designed to cover all, or nearly all, costs associated with such an operation.

5.6 MONITORING AND EVALUATION OF PROGRAMS

5.6.1 Monitoring Methods for Objectives

The following are the methods to be used to quantify and monitor the achievement of the various composting programs' objectives, including diversion from landfills and transformation facilities and reduction of hazards.

- Require the hauler to keep records of the amount of waste disposed by residents and businesses.
- Arrange with the hauler to provide commercial and industrial sources with a reporting device by which they can keep records of all diversion activities.
- Provide incentives for sources to engage in these types of reporting activities (fines for noncompliance).
- Keep records of attendance at all educational programs and events and follow up those events by leaving survey forms for participants to return to determine if they engaged in the type of activity promoted by the event.
- Review bid responses to determine if bid specification revisions have resulted in desired responses.
- Review annual purchases to determine if City has increased its purchase of recycled products.

5.6.2 Diversion Program Monitoring

Composting program monitoring and evaluation have already begun with the implementation of the comprehensive waste composition study conducted as a part of the SRR element. This study will form the baseline for measuring achievement of the SRR element's diversion objectives.

Either one or both of the following methods shall be used to monitor implementation of the various composting programs and to evaluate their effectiveness:

- Additional targeted waste characterization studies, involving a representative sampling of generator sites or

solid waste facilities, to measure changes in the volume, weight, and hazards of specific wastes.

- An assessment of any changes in the design, production, distribution, sale, and/or use of targeted materials which would affect waste generation.

The City will develop and select written mechanisms to obtain and evaluate the monitoring data. The mechanism(s) will be selected during the first year of program implementation.

5.6.3 Monitoring Program

5.6.3.1 Written Criteria to Evaluate Effectiveness

The criteria to be employed by the City to evaluate the program's effectiveness include:

- Are the stated diversion objectives being obtained? Since the program will be implemented in phases, continuous monitoring will help determine if implementation should be modified.
- Are the responsible entities developing and implementing their program elements? The City will be responsible for monitoring the development and implementation of the necessary program elements and will take measures to attain compliance.
- Are the program elements and tasks being implemented on schedule? The City will monitor the implementation schedule and will take corrective action as necessary.
- Are the diversion efforts successfully reaching targeted generators? Meeting the program's objectives will depend on successfully reaching the targeted generator groups and diverting associated yard wastes.
- Were the diverted/recovered materials actually composted and not just stockpiled? Successful implementation will require the actual composting of materials since excessive stockpiling can lead to health and safety hazards.

- Are the compost products being successfully marketed? Long-term success will depend on developing stable markets for compost products.
- Are program activities being implemented in an environmentally sound manner? The program activities must comply with applicable federal, state, and local laws, regulations, guidelines, ordinances, and policies for successful implementation.

5.6.3.2 Responsible Parties

Daily recordkeeping at all sites will be a mandatory requirement. Monthly reports will be sent to the CDD for analysis and evaluation. The CDD will monitor program elements and will report the necessary information to both the County and the State. It will also be responsible for auditing financial performance, to determine program related costs.

5.6.3.3 Implementation Costs

The primary funding requirements for the implementation of the composting program monitoring, evaluation, and reporting requirements are estimated in Table 5-6. The City will be responsible for funding this position. The City may also wish to hire a consultant to perform these activities as necessary.

5.6.3.4 Contingency Measures

Unforeseen circumstances may cause the composting program elements to fall short of expected diversion objectives. If program monitoring and evaluation show that specific program objectives are not being achieved, or if general diversion objectives are not being obtained, the City may consider implementing the following contingency measures, as appropriate:

- If program monitoring and evaluation indicate that a shortfall in yard waste diversion is due to programmatic problems and not due to source reduction, the City will evaluate implementing one or more of the following corrective actions:

- Targeted waste sorting to determine the source of the shortfall
- Program adjustment to increase diversion rates, such as mandatory participation by commercial haulers, landscapers
- Accelerated program expansion to include residential curbside collection
- Development and implementation of ordinances to mandate participation and discourage illegal dumping
- Revision of objectives to reflect a more realistic diversion potential
- Assure that the responsible entities develop and implement program elements according to the agreed upon timeline. Contingency measures to assure cooperation include:
 - Review the program staffing levels, job descriptions and assignments
 - Identify the facility or equipment related bottlenecks or inadequacies and correct, as necessary
 - Examine the coordination of effort among various cities and private entities, and correct or clarify the roles and responsibilities
 - Analyze the program funding in terms of adequacy and efficient and effective utilization
- Assure that targeted generator groups are participating. If program analysis indicates insufficient participation, determine the cause and take corrective action, from education and technical assistance to mandatory participation.
- Assure that recovered materials are being composted and marketed. If the composting program encounters difficulty, assess the problems in terms of process or market related issues. If process related, see above. If market related, perform market studies to determine what additional marketing efforts are required or if modifications

to the product may be required. If markets remain inadequate, other avenues for usage may have to be explored, such as erosion control on construction sites or protection of at risk soils on public land.

- Assure that all program related activities are implemented in an environmentally sound manner. If problems are encountered, take corrective action as necessary, including regulatory intervention.

6 SPECIAL WASTE COMPONENT

6 SPECIAL WASTE COMPONENT

Special wastes are solid wastes that require special handling or disposal because they present potential hazards to human health or the environment, or because they are difficult to handle in a landfill environment. This component addresses those special wastes identified by the City of Commerce as other special wastes: bulky items (including tires and white goods), inert solids (including construction and demolition wastes), and ash generated by the Commerce Refuse to Energy Facility (CREF). Other types of special wastes such as asbestos and sewage sludge are discussed in the existing conditions Section 6.2. Auto shredder waste and auto bodies were not identified in the solid waste generation study and will not be addressed further.

6.1 OBJECTIVES

The City identified the following objectives to manage special wastes generated in the jurisdiction:

- Design and construct an ash treatment facility that will divert the ash from the disposal waste stream and generate material for road construction at landfills.
- Set up a yearly collection service for residents by the end of 1992 whereby discarded white goods are picked up and donated to area charities.
- Set up a program by the end of 1993 where area businesses take used tires to selected places that retread or otherwise process recycled tires.
- Require area industrial and commercial refuse haulers, building contractors, and demolition contractors to design and implement, by the end of 1992, a program to recycle a certain percentage of construction and demolition waste such as asphalt and concrete.

6.2 EXISTING CONDITIONS

Currently, there are no City-sponsored programs that address the diversion of special waste. However, as identified in the solid waste generation study, bulky items such as tires and white goods are currently being diverted from disposal by the private sector through tire recycling and appliance repair. In addition, some inert solid waste generated by the construction and demolition industry is being recycled by a concrete and asphalt processor. The total quantity of these special wastes currently being diverted is 4,895 tons per year. It is expected that these diversion activities will continue.

Based on the findings of the solid waste generation study, approximately 36,500 tons per year of ash are generated by the Commerce Refuse to Energy Facility (CREF): approximately 16,300 tons per year are attributed to waste generated by the City of Commerce. The ash is currently disposed of at the Puente Hills Landfill near Whittier, California. None of this ash is currently being diverted; however, the City is planning to initiate an ash diversion program as described in Section 6.3.1.

The special wastes covered in this component include tires, construction and demolition wastes, bulky items such as white goods, and ash. Tires are currently regulated by the state under AB 1843 (Public Resources Code 42800, et seq.) which required the State to achieve a 25% reduction in landfilled tires within 4 years of implementation of a State-wide recycling program. The law established registration and permitting requirements, and a fee structure for used tire management. It also established grant and loan programs for the recyclers, and a State procurement policy for recycled tire products. A fee of \$0.25 per tire is collected by new and used tire dealers and remitted to the CIWMB for management of the state-wide program.

Construction and demolition waste was recently addressed in legislation (AB 1306) that focused on supporting construction and demolition waste markets. The Department of Transportation will modify bid specifications for road base, sub-base, and backfill materials to include use of recycled materials, given that the product will not reduce the quality of construction and is competitive in price.

In addition, although not encountered in the waste stream, the regulations require this component to address sewage sludge and asbestos. At present, the sewage generated in the City is handled through the County Sanitation Districts of Los Angeles County's sewage treatment system.

Sewage is treated at the Joint Carson Water Pollution Control Facilities in Carson, California and sludge is managed in accordance with applicable environmental permits and regulations. Asbestos waste, generated as a result of removal projects, is completely regulated by the South Coast Air Quality Management District. Asbestos generated in the City is handled by licensed contractors and is disposed outside of the City. The only landfill in California that is permitted by the State Water Resources Control Board to accept asbestos waste is the BKK Landfill. The landfill does not have records of jurisdiction (e.g. City) of generation of the asbestos waste accepted. Therefore, it is not possible to quantify the amount of waste for the City.

6.3 PROGRAM ALTERNATIVES

The alternatives discussed below address the City's objectives to divert certain special wastes from disposal. The following evaluation criteria, described in Section 1.4, are used:

- Effectiveness in Reducing Waste Quantity
- Absence of Hazards
- Limited Shift in Waste Type Generation
- Implementability
- Facility Needs
- Consistency with Local Policies
- Absence of Institutional Barriers
- Estimated Cost Rating
- End Uses

6.3.1 Alternative 1 - Ash Recycling Program

This alternative requires that the Commerce Refuse to Energy Authority (CREA) design and construct an ash treatment facility in conjunction with the Commerce Refuse-to-Energy Facility (CREF). Construction was initiated in May of 1991, and the treatment facility will require:

- Identifying and confirming end use markets
- Program and facility design

- Obtaining necessary permits
- Construction of treatment operation
- Operation and maintenance of treatment facility

At present, the CREF generates approximately 36,500 tons (of which 16,308 tons are attributed to Commerce waste) of ash per year. A new system, under construction, will chemically combine the ash in concrete prior to being recycled as road bed subbase material at the Puente Hills landfill. The City has an agreement with the CREA and the CREF that this activity will take place.

Effectiveness in Reducing Waste Quantity. This alternative would be very effective in reducing the amount of ash currently being disposed by the City. Approximately 16,308 tons of ash were generated in 1990 by the City (i.e., resulting from City refuse). With implementation of the proposed program, it is anticipated that 100% of the ash generated each year will be diverted. Therefore, this program will result in 16,736 tons being diverted in the short term (by 1995) and 17,190 tons being diverted in the medium term (by 2000).

Absence of Hazards. The ash treatment facility is designed to limit mechanical and chemical exposure hazards to employees at the treatment facility. Through proper employee training, availability of protective gear, and engineering controls, the hazards can be mitigated.

Flexibility. The treatment facility is designed to adapt to increased or decreased production of ash. If market conditions for the manufactured products turn unfavorable, landfilling the encapsulated ash may be required temporarily.

Limited Shift in Waste Type Generation. No shifts in waste type generation are expected.

Implementability. This alternative will be implemented during the short-term planning period.

Facility Needs. Processing equipment, an area for the equipment, and storage space for the product will be required. Existing space at the Refuse to Energy Facility will be used.

Consistency with Local Policies. This alternative is very consistent with the City's plans and policies as well as regional political entities.

Absence of Institutional Barriers. There are no significant institutional barriers to this alternative although permits will need to be obtained from various agencies. The CREA and the facility operators (LACSD) have obtained approval from several agencies to proceed with the project and are awaiting final approval from other agencies.

Estimated Cost Rating. The cost for implementing this program is relatively high. The initial capital expenditures will be approximately \$2.6 million.

End Uses. The end product will be used by the CSD as road subbase material at the Puente Hills Landfill. In addition, the CSD will evaluate other markets and end uses as the project progresses.

6.3.2 Alternative 2 - Used Tire Program

This alternative involves developing a program to increase the recycling of used tires. The program would consist of three parts:

- Encouraging the existing tire reuse programs being conducted by the private sector
- Developing educational materials for tire vendors and purchasers
- Fostering the development of local markets for used tires

Service stations and tire stores would be requested to provide used tires for resale and to participate in tire recapping and retreading by separating out suitable tires. Educational materials encouraging the purchase of longer-lasting tires or retreaded tires would be developed in conjunction with Section 7 of this SRR element. Local markets would be assisted by developing City procurement policies specifying the purchase of retreaded tires for non-emergency City vehicles, and allowing/requiring the use of asphalt-rubber for road construction and repair projects.

Effectiveness in Reducing Waste Quantity. This alternative would be effective in reducing the amount of used tires currently being disposed within the City. Maintaining the current diversion rate would represent 57 tons per year, or approximately 2.3% of the total tons of tires generated (2,512 tons per year in 1990). Implementation of the proposed program would double the existing tire diversion by the year 1995 and triple the diversion by the year 2000. This would result in a total of 117 tons in 1995 and 179 tons in 2000 being diverted.

Absence of Hazards. Stockpiled tires can collect rainwater and serve as breeding grounds for mosquitoes or other insects, or they can pose a fire hazard.

Flexibility. Used tire programs are somewhat flexible to adapt to changing conditions. However, the program is dependent on the development of markets for the recycled products. If market conditions for used tires were to turn unfavorable, the ability to recycle these materials may decrease.

Limited Shift in Waste Type Generation. No shifts in waste type generation are expected.

Implementability. This alternative can be implemented in the short-term planning period.

Facility Needs. No new facilities are required by this alternative. The City would be relying on existing facilities owned by private concerns.

Consistency with Local Policies. This alternative is generally consistent with local plans, policies, and ordinances.

Absence of Institutional Barriers. There are no significant institutional barriers to this alternative.

Estimated Cost Rating. The cost for implementing this program is considered relatively low. Educational costs are included in Section 7, Education and Public Information. Revising procurement policies should have little financial impact.

End Uses. Used tires in good condition can be resold and casings usable for retreaded tires can be marketed to tire distributors. Used tires can also provide the raw material for tire-derived products such as playground equipment or surfacing, floor mats, dock bumpers, floor tiles, rubber asphalt, or artificial reefs.

6.3.3 Alternative 3 - Construction and Demolition Waste Program

The inert solids portion of construction and demolition waste would be the focus of this special waste program. These inert solids are comprised of rock, concrete, brick, sand, soil, asphalt and sheetrock. Much of this material can be recycled for reuse in the construction industry. Currently, the City requires permits for most construction and demolition projects. As part of this alternative, each applicant for these permits would be required

to prepare a plan for how inert solid waste that is generated during the project would be segregated and recycled. As a condition of approval, a minimum recycling rate would be established for each project. The developer would be required to provide documentation at the completion of the project of the quantity and types of waste disposed and diverted and the destination of those diverted materials. To ensure compliance, reports could be required as part of the final inspection of new construction. A deposit could be required for demolition permits. When the waste documentation report is submitted, the deposit would be refunded.

Effectiveness in Reducing Waste Quantity. This alternative would be effective in reducing the amount of recyclable inert solids disposed of as a result of construction or demolition projects. Currently, 4,833 tons of inert solids (4.2% of the current waste generation rate and 70% of available inert materials) are being diverted through recycling. Implementation of the proposed program would increase the existing inert materials diversion 15% by 1995 and 20% by 2000. This would result in a total of 5,985 tons being diverted in 1995 and 6,265 tons being diverted in 2000 (or an additional 1,047 tons in the short term and 1,226 tons in the medium term).

Absence of Hazards. No hazards are directly associated with this alternative.

Flexibility. This alternative is moderately flexible to changing conditions. The amount of inert solid waste generated depends upon the amount of construction activity in the City. This alternative also may be affected by shifts in market conditions for the diverted materials.

Limited Shift in Waste Type Generation. No shifts in waste type generation are expected.

Implementability. This alternative could be implemented in the short-term planning period.

Facility Needs. No new facilities are expected to be required. Existing, privately owned recycling operations could be used to process the material.

Consistency with Local Policies. Several of the City's existing policies and ordinances may require revision before implementing this alternative. The planning ordinances and the demolition and construction permit process would require revision.

Absence of Institutional Barriers. There are no known institutional barriers to this alternative. However, resistance from private developers could be expected.

Estimated Cost Rating. This alternative would increase staff time in processing construction and demolition permit applications. However, the time required for application would depend upon a variety of factors, including staff experience and level of detail of the requirement.

End Uses. Construction activities such as building and road base construction are the anticipated end uses of this material.

6.3.4 Alternative 4 - White Goods Program

The white goods program is intended to divert large appliances from disposal by providing alternative collection and repair options to residents. The program consists of offering monthly collection of bulky items, then separating out white goods for either donation to charity for repair and reuse, or for recycling. Relaxing the requirements for business license fees for repair shops could encourage these types of businesses to locate in the City, thus increasing the opportunities to repair white goods.

Effectiveness in Reducing Waste Quantity. This alternative would be effective in reducing the amount of white goods currently being disposed by generators within the City. Currently, approximately 5 tons of white goods are being diverted; a total of 1,241 tons of white goods were generated during 1990. The proposed program would increase the diversion rate of white goods to 25% (of available white goods) for 1995 and 50% for 2000. This would result in a total of 310 tons in 1995 and 633 tons in 2000 being diverted from disposal.

Absence of Hazards. Due to their size and weight, white goods pose physical hazards to workers. Chemical hazards include the presence of polychlorinated biphenyls (PCBs) that might be contained in electrical capacitors, or chlorofluorocarbons (CFCs) that are in cooling units.

Flexibility. White goods programs are somewhat flexible to adapt to changing conditions. However, the program is dependent on the development of markets for the recycled products. If market conditions for discarded white goods (either as scrap metal or as reusable items) were to turn unfavorable, the ability to divert these materials may decrease.

Limited Shift in Waste Type Generation. No shifts in waste type generation are expected.

Implementability. This alternative can be implemented in the short term planning period.

Facility Needs. No new facilities are required by this alternative. The City would be relying on existing facilities owned by private concerns or by non-profit charitable organizations.

Consistency with Local Policies. This alternative is generally consistent with local plans, policies, and ordinances.

Absence of Institutional Barriers. There are no significant institutional barriers to this alternative.

Estimated Cost Rating. The cost for implementing this program is considered moderate. Collection costs depend upon the frequency of events. If charitable organizations are unwilling or unable to accept the collected materials, it may be possible to sell the discarded appliances to scrap metal dealers, thus offsetting the cost of the program.

End Uses. End uses for white goods include local charitable organizations, thrift shops, or scrap dealers.

6.4 PROGRAM SELECTION

All of the above alternatives were selected to address special waste in the City because they address the City's objectives to reduce the amount of special waste that must be disposed. The ash treatment facility will greatly increase the City's diversion potential and will generate a viable product for resale. The used tire program will encourage the reuse and recycling of tires, as well as help develop markets for products made from used or recycled tires. The construction and demolition waste program will increase the diversion of this material as well as establish a reporting system to quantify the amount of material being diverted. The white goods program will divert material from disposal and increase options for repair and reuse of discarded appliances.

6.4.1 Anticipated Diversion

Based on current generation rates, implementation of the selected alternatives is expected to divert approximately 18,210 tons in the short term (1995) and 19,228 tons in the medium term (2000). Table 6-1 presents a summary of the anticipated diversion quantities. These tonnages

represent an additional diversion of 19.1% in the short term and 19.7% in the medium term, on an "as generated" basis.

Table 6-1

Estimated Diversion for Selected Alternatives

Alternatives	Materials	Diverted ST (tons/year)	Diverted MT (tons/year)
1- Ash Recycling Program	CREF Ash	16,736	17,190
2- Used Tire Program	Tires	117	179
3- Construction and Demolition Waste Program	Inert materials, construction debris	1,047	1,226
4- White Goods Program	Appliances, mattresses, furniture	310	633
Total		18,210	19,228

6.4.2 End Uses

Once combined with concrete, the ash will be utilized for construction of roads (as road subbase) at the Puente Hills Landfill. Other uses such as construction blocks for wall construction will also be considered. Used tires in good condition can be resold and casings usable for retreaded tires can be marketed to tire distributors. Used tires can also provide the raw material for tire-derived products such as playground equipment, floor mats, dock bumpers, crash barriers, roofing adhesives, floor tiles, rubber-asphalt, or artificial reefs.

Inert solids removed from the waste stream can be recycled for reuse in the construction industry. Screened fines such as soil or sand can be used as engineered fill. Crushed concrete, with the reinforcing steel removed, can be used as aggregate or road base material. The salvaged steel can be sold as scrap. Asphalt can be reheated for reuse in new asphalt mixes.

End uses for white goods include local charitable organizations, thrift shops, or scrap dealers.

6.4.3 Facility Needs

The City would not need to build new facilities to implement these alternatives with the exception of the elements necessary for the ash treatment facility (see Section 6.3.1).

6.5 PROGRAM IMPLEMENTATION

This section identifies the parties responsible for program implementation, the tasks necessary to implement the programs, the implementation schedule, and implementation costs.

6.5.1 Short-Term Implementation Plan

The tasks necessary to implement the selected alternatives in the short-term planning period, along with a schedule and identification of responsible parties, are provided in Table 6-2.

6.5.2 Medium-Term Planning Period

The program implemented in the short-term planning period should be continued in the medium-term planning period.

Table 6-2
Short-Term Implementation Plan

Alternative	Start	Finish	Responsibility CREA⁽¹⁾/CSD⁽²⁾
1-Ash Recycling Program			
• Identify and confirm end use markets	completed		
• Program and facility design	completed		CSD
• Obtain necessary permits	--	10/91	CSD
• Construction of treatment operation	5/91	11/91	CSD
• Operation and maintenance of treatment facility	12/91	ongoing	CSD
• Utilization of manufactured product (limited to Puente Hills Landfill)	1/92	ongoing	CSD
2-Used Tire Program			
• Contact existing tire vendors	1/92	2/92	CDD ⁽³⁾
• Develop educational materials	see Section 7		Public Information Office
• Review City procurement guidelines	3/92	4/92	CDD
• Revise City procurement guidelines	4/92	6/92	CDD/City Attorney
3-Construction and Demolition Waste Program			
• Develop permit application instructions	9/92	12/92	CDD
• Revise City ordinance for permit review	1/93	3/93	City Attorney
• Adopt revised ordinance	6/93	6/93	City Council
• Implement new process	7/93	ongoing	CDD
4-White Goods Program			
• Contact private hauler, negotiate collection costs	1/92	3/92	CDD
• Contact local charities, thrift shops, and scrap dealers	1/92	3/92	CDD
• Schedule collection	6/92	8/92	CDD
• Advertise collection	9/92	11/92	Public Information Office
• Implement program	11/92	ongoing	CDD
Monitoring and Evaluation	ongoing		CDD

(1) Commerce Refuse to Energy Authority

(2) CSD: County Sanitation Districts of Los Angeles County

(3) CDD: Community Development Department

6.5.3 Implementation Costs and Revenues

The annual costs associated with implementing the programs are shown on Table 6-3. Public information costs associated with the program are considered in Section 7. No revenues are expected from this alternative.

Table 6-3

Special Waste Implementation Cost

Alternative	Capital Costs (\$)	Annual Costs (\$)
1-Ash Recycling Program	2,600,000	634,000
2-Used Tire Program	1,750 ⁽¹⁾	(2)
3-Construction and Demolition Waste Program	1,750 ⁽¹⁾	(2)
4-White Goods Program	1,750 ⁽¹⁾	(2)
Monitoring and evaluation	0	3,500
Total	\$2,605,250	\$637,500

(1) Costs for development and design (start up) of the alternative; assumes 2.5% FTE and \$70,000 per year.

(2) Ongoing costs to maintain the program are included in Education and Public Information Component.

6.6 MONITORING AND EVALUATION OF PROGRAMS

To effectively monitor the success of the programs, several tasks will be performed by the Community Development Department (CDD):

- Record the total tonnage of materials recycled by the ash, tire, construction and demolition, and white goods programs.
- Tabulate the amount of inert solids reported by private contractors as being recycled from construction and demolition programs.

- Record the total tonnage of products sold through the ash recycling program (i.e., crushed asphalt substitute consisting of processed ash and concrete).
- Monitor markets where special wastes are being diverted to verify the amount of diversion.

The City CDD will evaluate the effectiveness of the special waste program by the following criterion:

- Compare tonnage being recovered through the new programs with the current baseline. Quantities should increase, unless documented source reduction efforts result in decrease in quantity being generated.

During the first year of program implementation, the City will develop written mechanisms to verify and validate the information received through the monitoring program.

6.7 CONTINGENCY MEASURES

6.7.1 Short-Term Planning Period

If the City fails to make reasonable progress toward its special waste objectives, three steps will be taken.

- Step 1 This step assumes the special waste program objectives are reasonable and that the selected alternatives are adequate to achieve the objectives. In this case the monitoring and evaluation program will be re-evaluated to determine if sufficient and timely information is available to accurately evaluate the special waste program's progress. If the monitoring and evaluation program is adequate, Step 2 will then be followed. If the program is inadequate, then adjustments will be made (e.g., more frequent reporting, different quantification techniques).
- Step 2 This step assumes the monitoring and evaluation procedures are adequate and the program alternatives are properly selected but the identified objectives are not achievable

within the planning period. Under this scenario the objectives will be revised downward and the difference in diversion will be taken up with increases in other targets set for the other components (i.e., recycling and composting).

- Step 3 This step assumes that the monitoring and evaluation program is adequate and the objectives are attainable; however, the alternatives selected for implementation are inadequate to reach the objectives. Under this scenario the City will evaluate other alternative special waste programs for implementation. Specifically, identifying potential other end uses for the processed ash, adding mandatory provisions to the tire and white goods programs, and expanding the scope of the construction and demolition waste program.

6.7.2 Medium-Term Planning Period

If the City fails to make reasonable progress toward its year 2000 objectives, three steps will be taken. These three steps are identical to those for the short-term planning period.

7 EDUCATION AND PUBLIC INFORMATION COMPONENT

7 EDUCATION AND PUBLIC INFORMATION COMPONENT

Strong education and public information programs are an essential foundation to an effective Source Reduction and Recycling (SRR) element. Education and public information programs should be designed to create widespread public awareness of diversion activities taking place in the community, and to motivate participation in all of the SRR element programs.

The City plans to coordinate with the Cities that form the Southeast Area Integrated Waste Management Working Group in developing its education and public information program. Together the Cities in the group can design a practicable and effective education and public information program, while at the same time avoid duplication of efforts. The City plans to take advantage of the opportunities inherent in a coordinated program, but also realistically will coordinate as much as possible with the private sector. The City will explore working with the Industrial Council, Chamber of Commerce, and in-house public relations departments of major generators in the City and their trade associations.

This component includes five sections. Section 7.1 describes objectives for the short- and medium-term planning periods. Section 7.2 describes current education and public information programs. Section 7.3 identifies those solid waste generators who are to be targeted for education and public information programs, and describes those programs selected for the City. Section 7.4 describes the implementation phase and Section 7.5 describes the monitoring and evaluation phase.

7.1 OBJECTIVES

Specific education and public information objectives for the short-term and medium-term planning periods are listed in Sections 7.1.1 and 7.1.2 below. These specific objectives stem from the overall goals described in Section 2, especially those goals focusing on assuring wide public awareness of, and maximizing public motivation to participate in, all AB 939 programs.

7.1.1 Short-Term Objectives

The following are objectives for the short-term planning period for the City:

- Educate residential generators about AB 939 plans, SRR elements, and short-term programs applicable to their sector by:
 - developing a multilingual promotional campaign with respect to the City's SRR element by the end of 1991
 - developing a multilingual public information program which informs residents about diversion programs and opportunities for participation in such programs, to be effective by the end of 1992
 - encouraging schools to use existing curricula or to develop in accordance with the Education Codes, curricula that educate students about source reduction, recycling, and composting, by the end of 1992
- Educate nonresidential generators and encourage their participation in the City's diversion programs by:
 - developing targeted educational and informational materials for nonresidential waste generators, by the middle of 1992
 - developing a promotional campaign by the beginning of 1993, which targets large nonresidential waste generators and encourages them to implement internal diversion programs
 - conducting a representative waste evaluation for each type of targeted generator and publicizing the results, by the end of 1993
 - developing a program by the beginning of 1994 which trains interested nonresidential generators to become SRR element representatives who can provide information and technical assistance to other nonresidential generators with similar businesses

7.1.2 Medium-Term Objectives

The following are objectives for the medium-term planning period for the City:

- Expand all short-term education and public information programs targeting the residential sector by:
 - including promotion of medium-term SRR element diversion programs in the promotional campaign, by the end of 1995
 - engaging in more aggressive educational programs, which include seminars and workshops concerning diversion programs, by the end of 1997
 - developing roundtable discussions by the beginning of 1996 for school representatives from area schools in order to improve curricula developed with respect to the diversion methods
- Expand the education and public information program, targeting nonresidential generators by:
 - engaging in more aggressive educational programs, which include seminars and workshops concerning diversion programs, by the end of 1997
 - including promotion of medium-term programs in the promotional campaign, by the beginning of 1996
 - conducting representative waste evaluations for smaller nonresidential generators and publicizing the results, by the middle of 1996
 - involving trained nonresidential SRR element representatives in distributing and implementing model diversion programs, developed pursuant to the SRR components for targeted generators, by the end of 1997

7.2 EXISTING CONDITIONS

Currently, there are several education or public information programs to promote source reduction, recycling, or composting in the City. The City publishes a newsletter that contains occasional articles on solid waste issues. The City also provides public information on solid waste issues through cable television advertisements, workshops in the business community, and a staff recycling coordinator. In addition, the City conducts a pilot recycling program for residents and an office paper recycling program for its offices which also educate participants.

There are no formal education or public information programs currently in the City to promote safe handling and disposal of solid waste.

7.3 PROGRAM SELECTION

The first step in selecting an education and public information program for the City was to target solid waste generators on which the program would focus. Section 7.3.1 identifies those targeted waste generators. Section 7.3.2 sets out the alternatives which make up the program and which audience each alternative addresses, and then describes each individual program alternative in detail.

7.3.1 Targeted Audiences

Based upon analysis of the solid waste generation study for the City, some waste generator types have been targeted as priorities for education and public information programs. The following generators were selected based on the quantities of waste they generate or the specific types of waste they generate:

- single-family residences
- multifamily residences
- industrial and commercial office parks
- heavily industrial warehouses
- retail shopping centers and strips
- institutional generators (schools, churches, etc.)

7.3.2 Description of Education and Public Information Program Alternatives

Analysis of the SWGS led to the selection of specific alternatives. Following is a list of these alternatives, which compose the education and public information program.

- Alternative 1 - Residential promotional campaign
- Alternative 2 - Residential education and information program
- Alternative 3 - School curricula development
- Alternative 4 - Nonresidential promotional campaign
- Alternative 5 - Nonresidential education and information program
- Alternative 6 - Representative waste evaluations
- Alternative 7 - SRR element representative training program

The following sections describe all of the program alternatives selected for the City in detail.

7.3.2.1 Alternative 1 - Residential Promotional Campaign

The City will develop a multilingual promotional campaign with regard to the City's SRR element. This campaign will begin by promoting all short-term diversion programs stemming from the City's SRR element which are applicable to the residential sector. This campaign will encourage residents to participate in all relevant AB 939 programs.

The City will develop and publicize this campaign in collaboration with other Cities in the same group which also have diversion programs to promote. The City may need outside assistance to develop this general campaign.

In the medium term, this campaign will include promotion of medium-term diversion programs.

This campaign should be publicized in places that residents frequent such as schools, churches, grocery stores, shopping centers, post offices, libraries, and banks.

7.3.2.2 Alternative 2 - Residential Education and Information Program

In the short term, this program alternative will focus on developing and distributing multilingual educational and informational materials for residents concerning different methods of waste diversion such as source reduction, recycling, and composting. The City should work with other Cities within the group in developing these materials in order to reduce costs.

In the medium term, this alternative will include the development of more aggressive educational methods such as seminars and workshops, which focus on diversion methods.

These public information materials should be made available in the same places where the promotional campaign is publicized (e.g., schools, churches, libraries, grocery stores, shopping centers, and banks).

7.3.2.3 Alternative 3 - School Curricula Development

The City will encourage area school authorities to develop curricula that educate students about source reduction, recycling, composting, and special wastes. School authorities may want to rely upon curricula developed by other cities or states.

In the medium term, the City will suggest that its schools work together with other schools from Cities within the group in developing this curricula. The City may want to develop roundtable discussions for school officials to gather together and work on developing these curricula. At this point, the City may want to put pressure on area schools to use the curricula once they are developed.

7.3.2.4 Alternative 4 - Nonresidential Public Information Program

In the short term, the City will develop educational and promotional materials concerning SRR element diversion programs which target the nonresidential sector. The City will then distribute these materials to those nonresidential generators targeted by diversion programs. The City will want to work with other Cities in the group in developing these materials in order to reduce costs.

In the medium term, this program alternative will include development of more aggressive educational and informational materials such as

seminars and workshops which focus on diversion methods. Different seminars and workshops should be developed for different types of targeted nonresidential waste generators.

These educational and informational materials should be distributed to nonresidential generators at their places of business, through the Commerce Industrial Council/Chamber of Commerce, and through any other local business organizations.

7.3.2.5 Alternative 5 - Nonresidential Education and Promotional Campaign

In the short term, the City will develop educational and promotional materials concerning SRR element diversion programs that target the nonresidential sector. The City will then distribute these materials to those nonresidential generators targeted by diversion programs. The City plans to work with other cities in developing these materials in order to reduce costs. These materials will be distributed to nonresidential generators at their places of business, through the Chamber of Commerce and through any other local business organizations.

In the medium term, the City will conduct educational and informational events such as seminars and workshops that focus on diversion methods and publicize successful efforts on the part of the generators.

7.3.2.6 Alternative 6 - Representative Waste Evaluations

In the short term, the City will select one larger business and work with the firm to conduct a waste evaluation of that selected business's waste stream. That waste evaluation will serve as a case study waste evaluation for all area businesses. The City will publicize the results of the waste evaluation to all businesses.

In the medium term, the City will conduct a waste evaluation of a smaller nonresidential waste generator and publicize those results to relevant businesses.

The City plans to work together with adjoining Cities in conducting these waste evaluations. The Cities could each conduct evaluations of different types of businesses and then share the results.

7.3.2.7 Alternative 7 - SRR Element Representative Training Program

The City will develop a program that trains interested nonresidential generators to become "SRR element representatives" who can provide information and assistance on diversion methods to other nonresidential generators. The City could join together with the other Cities in the group in developing and offering this program.

In the medium term, the program could be expanded to include training SRR element representatives to assist in distributing and implementing the model diversion programs developed pursuant to the SRR components.

7.4 PROGRAM IMPLEMENTATION

7.4.1 Responsible Parties

The City's Public Information Office will be responsible for implementing the education and public information program for the City.

7.4.2 Short-Term and Medium-Term Implementation Plan

The tasks necessary to implement the selected alternatives and the schedule for implementation of these alternatives for both the short term and medium term are presented in Tables 7-1 and 7-2, respectively.

7.4.3 Identification of Costs and Revenues

Table 7-3 illustrates the known implementation costs, revenues, and revenue sources necessary for implementation of the education and public information program:

Table 7-1

Short-Term Implementation Plan

Alternative/Task	Start	Finish	Responsibility
1- Residential Promotional Campaign			
• Develop campaign	8/91	12/91	Public Information Office
• Publicize campaign	12/91	6/92	Public Information Office
2- Residential Education and Information Program			
• Develop materials	8/91	12/91	Public Information Office
• Distribute materials	12/91	1/93	Public Information Office
3- School Curricula Development			
• Encourage school to develop curricula	12/92	6/93	Community Relations Office
4- Nonresidential Promotional Campaign			
• Develop campaign	2/93	5/93	Public Information Office
• Publicize campaign	5/93	8/93	Public Information Office
5- Nonresidential Education and Information Program			
• Develop materials	7/92	8/92	Public Information Office
• Distribute materials	9/92	12/92	Public Information Office
6 - Representative Waste Evaluations			
• Select a targeted business	3/93	9/93	CDD ⁽¹⁾
• Conduct waste audit of selected businesses	10/93	12/93	CDD
• Publicize results of evaluation	12/93	12/95	Public Information Office
7 - SRR Element Representative Training Program			
• Develop training program	1/93	1/94	CDD
• Publicize program and recruit representatives	2/94	6/94	Public Information Office
• Train SRR element representatives	6/94	12/95	CDD
• Supervise implementation	12/95	12/96	CDD

(1) Community Development Department (CDD)

Table 7-2

Medium-Term Implementation Plan

Alternative/Task	Start	Finish	Responsibility
1- Residential Promotional Campaign • Expand campaign	1/96	12/99	Public Information Office
2- Residential Education and Information Program • Organize and conduct seminars and workshops	11/97	12/99	Public Information Office
3- School Curricula Development • Organize and conduct roundtables for schools to share ideas	1/96	12/99	Public Information Office
4- Nonresidential Promotional Campaign • Expand campaign	4/96	12/99	Public Information Office
5- Nonresidential Educational and Information Program • Organize and conduct seminars and workshops	6/96	12/99	Public Information Office
6- Representative Waste Evaluations • Publicize results of short-term monitoring and evaluation program	7/96	12/99	CDD ⁽¹⁾
7- SRR Element Representative • Involve SRR element representative in implementing model programs	11/97	12/99	CDD
Monitoring and Evaluation	ongoing		Public Information Office

(1) Community Development Department (CDD)

**Table 7-3
Education and Public Information Implementation Costs**

Alternative	Capital Costs (\$)	Annual Costs (\$)
Development and Implementation (all alternatives)	90,000⁽¹⁾	28,000⁽²⁾
1 - Residential promotional campaign		
2 - Residential education and information program		
3 - School curricula development		
4 - Nonresidential promotional campaign		
5 - Nonresidential public information program		
6 - Representative waste evaluations		
7 - SRR element representative training program		
Monitoring and Evaluation (all alternatives)	0	17,000⁽³⁾
Total	\$90,000	\$45,000

(1) Based on 45,000 employees, 20¢/employee/year, 10 years; for alternatives 1-7; assumes \$9,000 will be expended each year.

(2) Based on \$70,000/year, 2 staff, 18% FTE, applied to Alternatives 1-7

(3) Based on \$70,000/year, 2 staff, 6% FTE, applied to Alternatives 1-7; plus \$10,000 for waste studies, etc.

7.5 MONITORING AND EVALUATION OF PROGRAMS

7.5.1 Monitoring Methods

The following are the methods to be used to quantify and monitor achievement of the objectives of the City's education and public information program:

- Keep records of attendance or participation and follow up with attendees and participants to determine if they have been influenced by those programs.

- Keep records of recipients of educational and informational materials and follow up with those individuals to determine if they have been influenced by those materials.
- Solicit feedback from residents and nonresidential generators concerning the education and public information programs

Table 7-3 illustrates the known monitoring and evaluation funding requirements necessary for implementation of the education and public information program.

7.5.2 Written Criteria to Evaluate Effectiveness

The following criteria will be used to evaluate the program's effectiveness:

- participation rate for each alternative
- level of satisfaction with each alternative
- lifestyle/habit changes resulting from programs
- awareness level of residents, businesses, and any other waste generators

7.5.3 Responsible Parties

The City's Public Information Office will be responsible for the program's monitoring, evaluation, and reporting.

7.5.4 Contingency Measures

7.5.4.1 Short-Term Planning Period

If the City fails to make reasonable progress toward its 1995 education and public information objectives, three steps will be taken.

- Step 1 This step assumes the education and public information program objectives are reasonable and that the selected alternatives are adequate to achieve the objectives. In this case, the monitoring and evaluation program will be re-evaluated to determine if sufficient and timely information is available to accurately evaluate the education and public

information program's progress. If the monitoring and evaluation program is adequate, Step 2 will then be followed. If the monitoring and evaluation program is inadequate, then adjustments will be made (e.g., more frequent reporting, different reporting techniques).

Step 2 This step assumes the monitoring and evaluation procedures are adequate and the program alternatives are properly selected, but the identified objectives are not achievable within the planning period. Under this scenario the objectives will be revised.

Step 3 This step assumes that the monitoring and evaluation program is adequate and the objectives are attainable; however, the alternatives selected for implementation are inadequate to reach the objectives. Under this scenario the City will identify additional techniques to target the various waste generators, evaluate the current staffing level for implementation, and evaluate the current level of funding for this implementation.

7.5.4.2 Medium-Term Planning Period

If the City fails to make reasonable progress toward its year 2000 objectives, three steps will be taken. These three steps are identical to those for the short-term planning period.

8 DISPOSAL FACILITY CAPACITY COMPONENT

8 DISPOSAL FACILITY CAPACITY COMPONENT

Integrated waste management includes the environmentally safe disposal of solid wastes that cannot be feasibly diverted from landfilling. Because of the diminishing landfill capacity in the State of California, the Integrated Waste Management Act of 1989 requires that, in their Source Reduction and Recycling Elements, jurisdictions identify their current and future solid waste disposal capacity needs. A discussion of planned phase-outs, closures, or expansions is also included.

This component contains a needs projection that estimates the additional disposal capacity required to accommodate the anticipated solid waste generated within the City for a 15-year period (commencing 1991).

8.1 EXISTING PERMITTED SOLID WASTE DISPOSAL FACILITIES

The Commerce Refuse-to-Energy Facility (CREF) located at 5926 Sheila Street, is the only permitted solid waste management facility in the City of Commerce. This facility is one of two solid waste incinerators located in Los Angeles County.

8.1.1 Owner/Operator

The CREF is jointly owned and operated by the City of Commerce and the Los Angeles County Sanitation District No. 2 (LACSD).

8.1.2 Waste Types and Quantities

The facility is permitted for disposal of commercial/light industrial nonhazardous and mixed residential solid waste, and to recover energy from there. Based on data supplied by the City of Commerce and the 1989 Annual Report of Incoming Refuse at the CREF, approximately 112,920 tons of solid waste were transformed during 1989. Wastes transformed at the facility are generated by the City of Commerce and other jurisdictions in the County.

8.1.3 Permitted Facility Capacity

The facility has a permitted operating capacity of 400 tons per day.

8.1.4 Current Transformation Fees

Current disposal fees at the CREF are \$29 per ton, which translates to \$7.50 per month per household for residential solid waste removal.

8.1.5 Remaining Operating Life

The facility became operational in May of 1987 with the South Coast Air Quality Management District issuing a Temporary Permit to operate on March 10, 1990. The City and the LACSD signed a Joint Powers Agreement (November 1983) and created the Commerce Refuse-To-Energy Authority (CREA) which is in effect for a term of 50 years.

8.2 SOLID WASTE DISPOSAL FACILITY NEEDS PROJECTION

The solid waste disposal facility needs assessment provides an estimate of the disposal capacity required to accommodate the projected solid waste generation within the City for a 15-year period. For the purposes of the capacity calculation, only Commerce's waste stream is considered. Although the CREF receives wastes from other jurisdictions, the capacity of the CREF is not affected by these wastes at the present time. The disposal capacity was calculated using the following equation:

$$\text{Additional Capacity}_{\text{Year } n} = [(G+I) - (D + TC + LF + E)]_{\text{Year } n}$$

where

G = The amount of solid waste projected to be generated in the City.

The amount of solid waste generated in the City in 1990 was 154,442 cubic yards including the ash generated from the Refuse to Energy Facility (Commerce's only) and waste material transformed at other facilities (see the Solid Waste Generation Study, Section 2).

I = The amount of solid waste that is expected to be imported to the City.

Approximately 125,319 cubic yards of solid waste was accepted during 1990 for transformation at the Commerce Refuse to Energy

facility from other jurisdictions. However, for the purposes of the capacity calculation, these quantities were not included.

D = The amount diverted through the implementation of the proposed source reduction, recycling, and composting programs.

As described in the Solid Waste Generation Study (Section 2), the amount of solid waste diverted from disposal through existing programs in 1990 was approximately 34,640 cubic yards.

TC = The amount of volume reduction occurring through permitted transformation facilities.

As described in the Solid Waste Generation Study (Section 2), the amount of Commerce solid waste diverted from disposal through transformation facilities in 1990 was approximately 63,422 cubic yards; 90% of this amount is included as TC (57,080).

LF = The amount of permitted solid waste disposal capacity that is available for solid waste generated within the City.

There are no permitted landfills within the City's jurisdiction; therefore, this value is zero.

E = The amount of solid waste generated in the City that is exported to solid waste disposal facilities in another jurisdiction.

In 1990, approximately 59,616 cubic yards of solid waste including incinerator ash were exported to disposal facilities in other jurisdictions. The City has an agreement with the CSD to accept the ash residues at the Puente Hills Landfill (27,180 cubic yards). The remaining 32,436 are being disposed of without agreements and are therefore not included.

n = Each year of a 15-year period commencing in 1991.

Results of the solid waste disposal facility needs projection are shown in Tables 8-1 and 8-2. Results indicate that the City will always require additional disposal capacity during the 15-year planning period because of the need to landfill ash.

TABLE 8-1

**SOLID WASTE FACILITY CAPACITY PROJECTION: COMMERCE(1)
BASED ON CURRENT DIVERSION RATE**

Year	Solid Waste Generated(2)	Solid Waste Imported	Solid Waste Diverted(3)	Transformation Reduction	Solid Waste Exported	Remaining Permitted Disposal Capacity(4)	Additional Necessary Disposal Capacity
1990	154,442	0(5)	34,640	57,080	27,180	0	35,542
1991	155,913	0	34,970	57,624	27,439	0	35,881
1992	157,384	0	35,300	58,168	27,698	0	36,219
1993	158,856	0	35,630	58,711	27,957	0	36,558
1994	160,327	0	35,960	59,255	28,216	0	36,897
1995	161,798	0	36,290	59,799	28,475	0	37,235
1996	163,269	0	36,620	60,343	28,733	0	37,574
1997	164,741	0	36,950	60,886	28,992	0	37,912
1998	166,212	0	37,280	61,430	29,251	0	38,251
1999	167,683	0	37,610	61,974	29,510	0	38,589
2000	169,154	0	37,940	62,518	29,769	0	38,928
2001	170,625	0	38,270	63,061	30,028	0	39,267
2002	172,097	0	38,600	63,605	30,287	0	39,605
2003	173,568	0	38,930	64,149	30,546	0	39,944
2004	175,039	0	39,259	64,692	30,805	0	40,282
2005	176,510	0	39,589	65,236	31,064	0	40,621

(1) All waste volumes in cubic yards (based on conversion factor of 1200 pounds per cubic yard)

(2) Based on 1990 SCAG population data

(3) Based on current estimated diversion rate

(4) Assumes no remaining landfill disposal capacity within the City.

(5) Although refuse is imported to the CREF for incineration, the calculation only addresses Commerce's refuse.

TABLE 8-2

**SOLID WASTE FACILITY CAPACITY PROJECTION: COMMERCE(1)
BASED ON AB 939 DIVERSION RATE**

Year	Solid Waste Generated(2)	Solid Waste Imported	Solid Waste Diverted(3)	Transformation Reduction	Solid Waste Exported	Remaining Permitted Disposal Capacity(4)	Additional Necessary Disposal Capacity
1990	154,442	0(5)	34,640	57,080	27,180	0	35,542
1991	155,913	0	34,970	57,624	27,439	0	35,881
1992	157,384	0	35,300	58,168	27,698	0	36,219
1993	158,856	0	35,630	58,711	27,957	0	36,558
1994	160,327	0	35,960	59,255	28,216	0	36,897
1995	161,798	0	40,450	59,799	28,475	0	33,075
1996	163,269	0	40,817	60,343	28,733	0	33,376
1997	164,741	0	41,185	60,886	28,992	0	33,677
1998	166,212	0	41,553	61,430	29,251	0	33,977
1999	167,683	0	41,921	61,974	29,510	0	34,278
2000	169,154	0	84,577	62,518	29,769	0	0
2001	170,625	0	85,313	63,061	30,028	0	0
2002	172,097	0	86,048	63,605	30,287	0	0
2003	173,568	0	86,784	64,149	30,546	0	0
2004	175,039	0	87,520	64,692	30,805	0	0
2005	176,510	0	88,255	65,236	31,064	0	0

(1) All waste volumes in cubic yards (based on conversion factor of 1200 pounds per cubic yard)

(2) Based on 1990 SCAG population data

(3) Based on AB 939 diversion rate, i.e., 25% by 1995 and 50% by 2000

(4) Assumes no remaining landfill disposal capacity within the City.

(5) Although refuse is imported to the CREF for incineration, the calculation only addresses Commerce's refuse.

8.3 DISPOSAL FACILITY PHASE-OUT OR CLOSURE

There are no plans to phase-out or close the CREF.

8.4 NEW OR EXPANDED DISPOSAL FACILITIES

Currently, there are no plans to establish a new disposal facility within the City during the short- and medium-term planning periods.

8.5 SOLID WASTE EXPORT AGREEMENTS

The CREF has a 50-year useful life expectancy. All waste generated within the City and which has not been diverted by any AB 939 program, is required to be delivered to this facility for transformation. The City supports the Los Angeles County Solid Waste Management Action Plan adopted by the Board of Supervisors on April 5, 1988, and the County Sanitation Districts of Los Angeles in May of 1988. Any residual amount of refuse that cannot be reduced, reused, or recycled will be handled and disposed of in accordance with this plan.

9 FUNDING COMPONENT

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The purpose of the funding component is to demonstrate that the City of Commerce has sufficient funds and allocation of resources to plan, develop, and implement the SRR element programs identified in this document.

This section briefly describes 1) the current mechanisms used to fund solid waste programs for the City of Commerce, 2) estimated costs for the component programs scheduled for implementation in the short-term planning period, 3) additional City staff resources required to implement the programs, 4) revenue sources to support the component programs, and 5) contingency funding sources.

9.1 CURRENT FUNDING MECHANISMS

The City of Commerce provides residential refuse collection through an exclusive franchise for four units or less with Metropolitan Waste Disposal. There is no direct fee charged to the resident. The City pays \$319,040 per year from the General Fund to Metropolitan for unlimited service to 3,200 households.

Larger multifamily units, business, and industry are served by 53 private haulers. Fees charged to these customers are billed directly by the haulers and are not subject to regulation by the City. Private haulers pay a licensing fee of \$500 per vehicle to operate in the City. Based on information supplied by the City this amounts to approximately \$46,000 per year, which is placed into the General Fund.

The responsible party for solid waste management in the City is the Public Works Department. The Director of Public Works reports to the City Administrator. The department is funded by the appropriations from the General Fund which are approved by the City Administration and City Council. Two activities in the City Budget, Public Works Administration (5010) and Public Works contracts (5040), support solid waste management programs. Personnel support is funded from activity 5010 while the residential refuse and disposal contract is funded through activity 5040, object 5755, Refuse Disposal. There are no full-time staff dedicated to solid waste management. These activities are handled on a part-time basis by staff in the Public Works Department. The City plans to add a

staff person for these activities. The interim position is being filled, on a part-time basis, by the Community Development Department.

9.2 ESTIMATED PROGRAM COST

Table 9-1 summarizes the estimated costs for program planning and implementation over the short-term planning period for the selected alternatives for each component. Capital costs are included for each of the components along with the total annual costs. Program costs include the cost of time spent by appropriate City staff. Costs are shown in 1991 dollars. These are planning level estimates which were developed based on a number of broad assumptions. Actual costs may differ based on revisions to program design or other factors.

9.3 ADDITIONAL CITY STAFF RESOURCES

The City will need two new positions for solid waste management in the short-term planning period to help carry out the component programs. Salaries for these individuals will be funded through Environmental Services (1570). These positions are in addition to the one position that is presently budgeted. The following new positions are required:

- | | |
|--------------------------|----------|
| • Solid Waste Technician | \$25,000 |
| • Clerk/Typist | \$20,364 |

9.4 REVENUE SOURCES FOR COMPONENT PROGRAMS

The City will continue to use the General Fund for its planning and administrative costs for integrated waste management programs through 1995. The City of Commerce has demonstrated an economic development program that has been extremely effective in generating general fund revenues.

Costs for development and implementation of the various programs for the commercial and industrial sectors will be financed through a gross receipts fee ranging from 7% to 10% to be paid by the licensed refuse haulers.

Rate increases may be necessary to cover some future expenses. The projected revenues are shown in Table 9-2.

Table 9-1

**Source Reduction and Recycling Element
Known Planning, Development, and Implementation Cost Estimate⁽¹⁾**

Component/Program	Public	Private	1991	1992	1993	1994	1995	Funding Source
<u>Source Reduction</u>								
• Educational Efforts	X		0	18,670	18,670	18,670	18,670	General Fund
• Nonprocurement Activities	X		0	18,670	18,670	18,670	18,670	General Fund
• Awards	X		0	18,670	18,670	18,670	18,670	General Fund
• Monitoring and Evaluation ⁽²⁾	X		24,000	24,000	24,000	24,000	24,000	General Fund
<u>Recycling</u>								
• Residential Curbside Collection	X	X	0	111,600	91,600	91,600	91,600	General Fund
• Multi-Family Collection	X	X	0	43,800	36,600	36,600	36,600	General Fund
• At-Source Separation and Collection	X	X	0	5,600	5,600	5,600	5,600	General Fund
• MRF Development	X	X	0	5,600	5,600	5,600	5,600	General Fund
• Various Supportive Policies	X		0	5,600	5,600	5,600	5,600	General Fund
• Monitoring and Evaluation ⁽²⁾	X		17,000	17,000	17,000	17,000	17,000	General Fund
<u>Composting</u>								
• Self Haul Drop-Off	X		0	7,000	7,000	7,000	7,000	General Fund
• Decentralized Preprocessing	X		0	7,000	7,000	7,000	7,000	General Fund
• Yard Waste Composting	X		0	7,000	7,000	7,000	7,000	General Fund
• Supportive Policies ⁽³⁾	X		0	7,000	7,000	7,000	7,000	General Fund
• Monitoring and Evaluation ⁽²⁾	X		17,000	17,000	17,000	17,000	17,000	General Fund
<u>Special Waste</u>								
• Ash Recycling Program	X	X	0	3,234,000	634,000	634,000	634,000	General Fund/CREF Bonds
• Used Tire Program	X	X	0	1,750	0	0	0	General Fund
• Construction/Demolition Waste Program	X	X	0	1,750	0	0	0	General Fund
• White Goods Program	X	X	0	1,750	0	0	0	General Fund
• Monitoring and Evaluation	X		3,500	3,500	3,500	3,500	3,500	General Fund
<u>Education and Public Information</u>								
• Residential Programs	X		0	9,250	9,250	9,250	9,250	General Fund
• Nonresidential Programs	X		0	9,250	9,250	9,250	9,250	General Fund
• Governmental Programs	X		0	9,250	9,250	9,250	9,250	General Fund
• School Programs	X		0	9,250	9,250	9,250	9,250	General Fund
• Monitoring and Evaluation	X		17,000	17,000	17,000	17,000	17,000	General Fund
Total Costs			78,500	3,620,210	978,510	978,510	978,510	
Total City Costs			78,500	242,010	227,510	227,510	227,510	

(1) All costs are 1991 dollars and are rounded to the nearest ten dollars.

(2) Includes waste audits.

(3) Includes promotion and education, financial incentives, and regulatory measures.

Table 9-2
Anticipated Revenues

Potential Revenue Source	1991	1992	1993	1994	1995
Gross Receipts Fee	54,000	199,000	199,000	199,000	199,000
Hauler Licensing Fee	46,000	46,000	46,000	46,000	46,000
Total	100,000	245,000	245,000	245,000	245,000

9.5 CONTINGENCY FUNDING SOURCES

Other funding mechanisms that could be explored for contingency funding for the City include:

- **Special assessment.** These can take the form of short-term taxes or assessments on businesses to develop source reduction and recycling programs.
- **Business license fees.** A gross receipts fee could be implemented for private haulers on amounts collected from commercial/industrial waste generators. These monies could be used to implement the commercial/industrial diversion programs.

10 INTEGRATION COMPONENT

10 INTEGRATION COMPONENT

This component explains how the source reduction, recycling, composting, and special waste components combine to achieve the State-mandated diversion goals. This section provides a summary of the solid waste management practices proposed by the SRR element, explanations of how the programs work together to maximize feasible source reduction, recycling, and composting options and jointly achieve the diversion mandates; and an explanation of how priorities between components were established. An integrated schedule is also provided.

10.1 PROPOSED SOLID WASTE MANAGEMENT PRACTICES

The solid waste management practices described in the source reduction, recycling, composting, and special waste components of this document (Section 3 through 6), which are to be continued, expanded, or implemented in the City of Commerce are designed to comply with the integrated waste management hierarchy established by AB 939. Consistent with this hierarchy, the City will promote source reduction activities targeted at decreasing the amount of solid wastes being generated in the City. For wastes that continue to be generated in the City, recycling and composting programs will contribute to diverting waste from disposal to the extent feasible. For wastes that cannot be diverted, the City will ensure that they are landfilled in an environmentally safe manner.

The City's specific source reduction, recycling, composting, and disposal activities that are designed to achieve integrated waste management are as follows.

Source Reduction Programs

- Educational efforts
- Awards
- Nonprocurement source reduction activities

Recycling Programs

- Expanded residential curbside collection (single-family and multifamily)
- At-source separation/collection for businesses
- Materials recovery operations at CREF and at-source processing
- Various supportive policies including:
 - Green waste cover project
 - Transformation
 - Antiscavanging ordinances, business permit requirements, mandatory recycling sources, cooperative marketing, and educational outreach and technical assistance

Composting Programs

- Self-haul drop-off
- Decentralized preprocessing and material storage
- Yard waste composting
- Various supportive policies including: promotion and education, financial incentives, and regulatory measures and policies

Special Waste Programs

- Ash recycling program
- Used tire program
- Construction and demolition waste program
- White goods program

10.2 COMPONENT INTEGRATION

The source reduction, recycling, composting, and special wastes components have been integrated so that one program compliments

another and so that the programs selected for implementation from each component achieve their maximum potential. Initially, mutually exclusive objectives and target materials for each component were developed to prevent or minimize the implementation of programs that compete for a specific material or waste source. With its focus on mutually exclusive programs and activities, the City's SRR element maximizes the use of all feasible source reduction, recycling, and composting options.

Public education and information, and funding for programs will be integrated for time efficiency and cost effectiveness. Staff time required for public education and information will be shared among the components. All funding requirements for residential programs will be provided through the General Fund. Commercial and industrial programs will be funded by a gross receipts fee ranging from 7% to 10% to be paid by the licensed refuse haulers.

10.3 COMPLIANCE WITH DIVERSION MANDATES

The City currently diverts 22.4% of the solid waste generated in the City from disposal. The source reduction, recycling, composting, and special wastes programs selected for implementation are designed to increase this diversion rate starting in the short term in order to reach the medium-term planning period goal of 50% diversion. These new programs will be implemented in coordination with existing diversion programs and planned expansion of these programs. The expected diversion from the integrated programs by component, and planning term is presented in Table 10-1.

Table 10-1

Component Integration Total Waste Stream Diversion

Program	Diversion Percentage	
	Short Term	Medium Term
Source Reduction	0	0
Recycling	3.5	17.9
Composting	0.4	0.4
Special Waste	19.1	19.7
Total Annual Diversion (as generated)	23%	38%
With Existing Diversion (22.4%)	45.4%	60.4%

10.4 COMPONENT PRIORITIES

Certain materials in the waste stream may be diverted from landfilling by a variety of methods. Paper, for example, is a targeted material that may be diverted from landfilling through several programs, including (but not limited to) product reuse, curbside recycling, and commercial recycling.

In developing the City's SRR element, priorities had to be set between components. Priorities were based on regulatory, technical, institutional, and economic considerations. These considerations included:

- results of the solid waste generation study
- consistency with existing waste management practices (local conditions)
- location of the program in the integrated waste management hierarchy
- effectiveness in reducing the volume, weight, or hazard of the targeted wastes

10.5 INTEGRATED SCHEDULE

The integrated schedules for the short-term and medium-term planning periods, shown in Table 10-2, include implementation tasks for new and

expanded programs, and identifies the agency responsible for implementation, and task and milestone dates. Ongoing programs are not addressed in these tables because they are included in each of the individual components. The CDD will be responsible for coordinating the monitoring of the implementation schedules and for determining priorities between component programs.

Table 10-2
City of Commerce
SRRE Implementation
Short-Term Calendar

Component	Alternative	Task	Start Date	Finish Date	Responsibility
Special Waste	Ash Recycling Program	Obtain necessary permits	1/91	12/91	County Sanitation Districts of Los Angeles County (CSD)/ Community Development Department (CDD)
Special Waste	Ash Recycling Program	Construction and treatment operation	5/91	12/91	CREA Authority
Education and Public Information	Residential Education and Information Program	Develop materials	8/91	12/91	Public Information Office
Education and Public Information	Residential Promotional Campaign	Develop campaign	8/91	12/91	Public Information Office
Special Waste	Ash Recycling Program	Operation and maintenance of treatment facility	12/91	ongoing	CREA Authority
Recycling	Business Permit Requirement	Develop potential ordinance and enact	12/91	1/93	CDD/City Council
Education and Public Information	Residential Education and Information Program	Distribute materials	12/91	1/93	Public Information Office
Education and Public Information	Residential Promotional Campaign	Publicize campaign	12/91	6/92	Public Information Office
Source Reduction	Nonprocurement Source Reduction Activities	Pilot in-house program	1/92	6/92	CDD
Special Waste	Ash Recycling Program	Utilization of manufactured product	1/92	ongoing	CSD/CDD
Special Waste	Used Tire Program	Contact existing tire vendors	1/92	2/92	CDD
Special Waste	White Goods Program	Contact private hauler, negotiate collection costs	1/92	3/92	CDD
Special Waste	White Goods Program	Contact local charities, thrift shops and scrap dealers	1/92	3/92	CDD
Recycling	At-Source Recycling Service to all Area Businesses	Review opportunity with hauler	1/92	6/92	CDD

Table 10-2
City of Commerce
SRRE Implementation
Short-Term Calendar (continued)

Component	Alternative	Task	Start Date	Finish Date	Responsibility
Recycling	Policy on Scavenging	Evaluate need for ordinance	1/92	3/92	CDD
Recycling	Contracted or Franchised Recycling Service Provision	Review need	1/92	3/92	CDD
Recycling	Cooperation Marketing	Review markets	1/92	12/92	CDD
Recycling	Cooperation Marketing	Lobby for market expansion	1/92	12/95	CDD
Recycling	Cooperation Marketing	Discuss MDZ with adjoining cities	1/92	2/92	CDD
Recycling	Cooperation Marketing	Prepare application to the CIWMB	1/92	3/92	CDD
Recycling	Procurement Practices	Review existing policies and practices	1/92	6/92	CDD
Recycling	Business Permit Requirement	Set fee structure	1/92	6/92	CDD/Finance
Recycling	City Recovery Program	Review and augment existing program	1/92	6/92	CDD
Recycling	City Recovery Program	Training of staff	1/92	6/92	CDD
Source Reduction	Educational Efforts	Formalize cooperative assistance, management, cost, risk sharing program among cities	1/92	6/92	CDD
Recycling	Mandatory Recycling Service Provided by Hauler	Evaluate need for ordinance	2/92	6/92	CDD
Recycling	Contracted or Franchised Recycling Service Provision	Develop bid package	3/92	6/92	CDD/Finance/City Attorney/City Council
Recycling	Policy on Scavenging	Draft and enact ordinance	3/92	6/92	CDD/City Council
Recycling	City Recovery Program	Purchase equipment	3/92	6/92	CDD
Special Waste	Used Tire Program	Review City procurement guidelines	3/92	4/92	CDD
Special Waste	Used Tire Program	Revise City procurement guidelines	4/92	6/92	CDD/City Attorney
Special Waste	White Goods Program	Schedule collection	6/92	8/92	CDD

Table 10-2
City of Commerce
SRRE Implementation
Short-Term Calendar (continued)

Component	Alternative	Task	Start Date	Finish Date	Responsibility
Source Reduction	Nonprocurement Source Reduction Activities	Full program	6/92	12/95	CDD
Recycling	Contracted or Franchised Recycling Service Provision	Request bids	6/92	10/92	CDD/Finance/City Attorney/City Council
Recycling	Mandatory Recycling Service Provided by Hauler	Draft and enact ordinance	6/92	12/92	CDD/City Council
Recycling	Educational Outreach/Technical Assistance	Design and conduct educational outreach program	6/92	12/92	CDD
Recycling	Business Permit Requirement	Develop planning assistance and filing forms for recycling plans	6/92	12/92	CDD
Source Reduction	Awards	Design award program	7/92	12/92	CDD
Source Reduction	Educational Efforts	Develop and implement promotional campaign	7/92	12/95	CDD
Source Reduction	Educational Efforts	Develop and implement educational materials for residents	7/92	12/95	CDD
Recycling	At-Source Recycling Service to all Area Business	Provide outreach/technical assistance	7/92	12/95	CDD/Private Sector
Education and Public Information	Nonresidential Education and Information Program	Develop materials	7/92	8/92	Public Information Office
Education and Public Information	Nonresidential Education and Information Program	Distribute materials	9/92	12/92	Public Information Office
Special Waste	Construction and Demolition Waste Program	Develop permit application instructions	9/92	12/92	CDD
Special Waste	White Goods Program	Advertise collection	9/92	11/92	Public Information Office
Recycling	Contracted for Franchised Recycling Service Provision	Evaluate bids and accept bidder	10/92	12/92	CDD/Finance/City Attorney/City Council
Special Waste	White Goods Program	Implement program	11/92	ongoing	CDD/City Attorney/City Council
Source Reduction	Awards	Integrate with EPIC	12/92	6/93	CDD

Tab. 10-2
City of Commerce
SRRE Implementation
Short-Term Calendar (continued)

Component	Alternative	Task	Start Date	Finish Date	Responsibility
Recycling	Contracted for Franchised Recycling Service Provision	Develop contract and contract conditions	12/92	3/93	CDD/Finance/City Attorney/City Council
Education and Public Information	School Curricula Development	Encourage school to develop curricula	12/92	6/93	Public Information Office
Composting	Yard Waste Composting	Develop program and determine facility needs	12/92	6/93	CDD/Private Sector
Composting	Self-Haul Drop-Off	Design collection system	1/93	6/93	Private Haulers/Generators
Composting	Decentralized Preprocessing and Materials Processing	Develop program and determine facility needs	1/93	6/93	Private Sector
Composting	Yard Waste Composting	Market survey	1/93	6/93	CDD
Composting	Yard Waste Composting	Procurement guidelines	1/93	6/93	CDD
Composting	Yard Waste Composting	Product quality standards	1/93	7/93	CDD
Composting	Yard Waste Composting	Technical assistance	1/93	12/94	CDD
Special Waste	Construction and Demolition Waste Program	Revise City ordinance for permit review	1/93	3/93	City Attorney
Recycling	Materials Recovery Facility	Assess feasibility	1/93	12/93	CDD
Education and Public Information	SRR Employment Representative Training Program	Develop training program	1/93	1/94	CDD
Composting	Decentralized Preprocessing and Materials Storage	Enact model zoning ordinance	2/93	7/93	CDD
Education and Public Information	Nonresidential Promotional Campaign	Develop campaign	2/93	5/93	Public Information Office
Education and Public Information	Representative Waste Evaluations	Select a targeted business	3/93	9/93	CDD
Recycling	Procurement Practices	Revise bid specifications, if necessary	3/93	6/93	CDD/Finance
Education and Public Information	Nonresidential Promotional Campaign	Publicize campaign	5/93	8/93	Public Information Office

Table 10-2
City of Commerce
SRRE Implementation
Short-Term Calendar (continued)

Component	Alternative	Task	Start Date	Finish Date	Responsibility
Composting	Self-Haul Drop-Off	Implement collection system	6/93	12/93	Private Haulers/Generators
Composting	Self-Haul Drop-Off	Alternative oversight	6/93	ongoing	CDD
Recycling	Business Permit Requirement	Review business plans	6/93	12/95	CDD
Special Waste	Construction and Demolition Waste Program	Adopt revised ordinance	6/93	6/93	City Council
Special Waste	Construction and Demolition Waste Program	Implement new process	7/93	ongoing	CDD
Composting	Self-Haul Drop-Off	Develop incentive rates	7/93	12/93	CDD
Composting	Self-Haul Drop-Off	Add multiple drop-off sites	As Required	As Required	CDD
Education and Public Information	Representative Waste Evaluations	Conduct waste audit of selected business	10/93	12/93	CDD
Education and Public Information	Representative Waste Evaluations	Publicize results of evaluation	12/93	12/95	Public Information Office
Composting	Yard Waste Composting	Procure facilities	12/93	6/94	Private Sector
Recycling	Materials Recovery Facility	Conduct or supervise CREF siting investigation	1/94	12/94	CDD/Private Sector
Composting	Decentralized Preprocessing and Materials Storage	Procure facilities	1/94	6/94	Private Sector
Composting	Self-Haul Drop-Off	Develop mandatory business license provisions	1/94	6/94	CDD
Education and Public Information	SRR Employment Representative Training Program	Publicize program and recruit representatives	2/94	6/94	Public Information Office
Education and Public Information	SRR Element Representative Training Program	Train SRR element representatives	6/94	12/95	CDD
Composting	Decentralized Preprocessing and Material Processing	Implement program	6/94	12/94	Private Sector

Table 10-2
City of Commerce
SRRE Implementation
Short-Term Calendar (continued)

Component	Alternative	Task	Start Date	Finish Date	Responsibility
Composting	Yard Waste Composting	Implement program	6/94	ongoing	Private Sector
Composting	Yard Waste Composting	Program monitoring and review	6/94	ongoing	CDD
Education and Public Information	SRR Element Representative Training Program	Supervise implementation	12/95	12/96	CDD
Source Reduction	Educational Efforts	Modify and implement motivational campaign	1/96	1/2000	CDD
Source Reduction	Educational Efforts	Modify and implement educational materials for residents	1/96	1/2000	CDD
Source Reduction	Educational Efforts	Modify and implement curricula changes	1/96	1/2000	CDD
Recycling	At-Source Collection	Review opportunity with hauler	1/96	6/96	CDD
Recycling	Materials Recovery Program	Modify CREF for MRF operations	1/96	12/98	CDD/Private Sector
Composting	Decentralized Preprocessing and Materials Storage	Capacity	1/96	6/96	CDD
Composting	Yard Waste Composting	Examine diversion of related wastes	1/96	6/96	CDD
Composting	Yard Waste Composting	Develop/implement yard waste disposal bans	1/96	6/96	CDD/City Council
Composting	Yard Waste Composting	Implement fines for illegal disposal	1/96	6/96	CDD/City Council

Table 10-2
City of Commerce
SRRE Implementation
Short-Term Calendar (continued)

Component	Alternative	Task	Start Date	Finish Date	Responsibility
Education and Public Information	Residential Promotional Campaign	Expand campaign	1/96	12/99	Public Information Office
Education and Public Information	School Curricula Development	Organize and conduct roundtables for schools to share ideas	1/96	12/99	Public Information Office
Source Reduction	Nonprocurement Source Reduction Activities	Modify in-house program	1/96	6/96	CDD
Education and Public Information	Nonresidential Promotional Campaign	Expand campaign	4/96	12/99	Public Information Office
Education and Public Information	Nonresidential Education and Information Program	Organize and conduct seminars and workshops	6/96	12/99	Public Information Office
Source Reduction	Nonprocurement Source Reduction Activities	Full program	6/96	12/99	CDD
Source Reduction	Awards	Re-design award program	7/96	12/96	CDD
Education and Public Information	Representative Waste Evaluations	Publicize results of short-term monitoring and evaluation program	7/96	12/99	CDD
Source Reduction	Awards	Integrated with EPIC	12/96	6/99	CDD
Recycling	At-Source Collection: Expand Recycling	Provide outreach/technical assistance	12/96	12/99	CDD/Public Information Office
Source Reduction	Educational Efforts	Modify and conduct seminars and workshops	1/97	1/2000	CDD
Composting	Yard Waste Composting	Develop mandatory source separation ordinances	1/97	6/97	CDD/City Council
Education and Public Information	Residential Education and Information Program	Organize and conduct seminars and workshops	11/97	12/99	Public Information Office
Education and Public Information	SRR Element Representative	Involve SRR element representative in implementing model programs	11/97	12/99	CDD
Composting	Yard Waste Composting	Develop/implement punitive rate for non-compliance	1/98	6/98	CDD

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9.4 REVENUE SOURCES FOR COMPONENT PROGRAMS

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Costs for development and implementation of the various programs for the commercial and industrial sectors will be financed through a gross receipts fee ranging from 7% to 10% to be paid by the licensed refuse haulers.

Rate increases may be necessary to cover some future expenses. The projected revenues are shown in Table 9-2.

FINAL DRAFT

Table 9-1

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• Awards	X		0	18,670	18,670	18,670	18,670	General Fund
• Monitoring and Evaluation ⁽²⁾	X		24,000	24,000	24,000	24,000	24,000	General Fund
<u>Recycling</u>								
• Residential Curbside Collection	X	X	0	111,600	91,600	91,600	91,600	General Fund
• Multi-Family Collection	X	X	0	43,800	36,600	36,600	36,600	General Fund
• At-Source Separation and Collection	X	X	0	5,600	5,600	5,600	5,600	General Fund
• MRF Development	X	X	0	5,600	5,600	5,600	5,600	
• Various Supportive Policies	X		0	5,600	5,600	5,600	5,600	General Fund
• Monitoring and Evaluation ⁽²⁾	X		17,000	17,000	17,000	17,000	17,000	General Fund
<u>Composting</u>								
• Self Haul Drop-Off	X		0	7,000	7,000	7,000	7,000	General Fund
• Decentralized Preprocessing	X		0	7,000	7,000	7,000	7,000	General Fund
• Yard Waste Composting	X		0	7,000	7,000	7,000	7,000	General Fund
• Supportive Policies ⁽³⁾	X		0	7,000	7,000	7,000	7,000	General Fund
• Monitoring and Evaluation ⁽²⁾	X		17,000	17,000	17,000	17,000	17,000	General Fund
<u>Special Waste</u>								
• Ash Recycling Program	X	X	0	3,234,000	634,000	634,000	634,000	General Fund/CREF Bonds
• Used Tire Program	X	X	0	1,750	0	0	0	General Fund
• Construction/Demolition Waste Program	X	X	0	1,750	0	0	0	General Fund
• White Goods Program	X	X	0	1,750	0	0	0	General Fund
• Monitoring and Evaluation	X		3,500	3,500	3,500	3,500	3,500	General Fund
<u>Education and Public Information</u>								
• Residential Programs	X		0	9,250	9,250	9,250	9,250	General Fund
• Nonresidential Programs	X		0	9,250	9,250	9,250	9,250	General Fund
• Governmental Programs	X		0	9,250	9,250	9,250	9,250	General Fund
• School Programs	X		0	9,250	9,250	9,250	9,250	General Fund
• Monitoring and Evaluation	X		17,000	17,000	17,000	17,000	17,000	General Fund
Total Costs			78,500	3,620,210	978,510	978,510	978,510	
Total City Costs			78,500	242,010	227,510	227,510	227,510	

(1) All costs are 1991 dollars and are rounded to the nearest ten dollars.

(2) Includes waste audits.

(3) Includes promotion and education, financial incentives, and regulatory measures.

Table 9-2
Anticipated Revenues

Potential Revenue Source	1991	1992	1993	1994	1995
Gross Receipts Fee	54,000	199,000	199,000	199,000	199,000
Hauler Licensing Fee	46,000	46,000	46,000	46,000	46,000
Total	100,000	245,000	245,000	245,000	245,000

9.5 CONTINGENCY FUNDING SOURCES

Other funding mechanisms that could be explored for contingency funding for the City include:

- **Special assessment.** These can take the form of short-term taxes or assessments on businesses to develop source reduction and recycling programs.
- **Business license fees.** A gross receipts fee could be implemented for private haulers on amounts collected from commercial/industrial waste generators. These monies could be used to implement the commercial/industrial diversion programs.

10 INTEGRATION COMPONENT

10 INTEGRATION COMPONENT

This component explains how the source reduction, recycling, composting, and special waste components combine to achieve the State-mandated diversion goals. This section provides a summary of the solid waste management practices proposed by the SRR element, explanations of how the programs work together to maximize feasible source reduction, recycling, and composting options and jointly achieve the diversion mandates; and an explanation of how priorities between components were established. An integrated schedule is also provided.

10.1 PROPOSED SOLID WASTE MANAGEMENT PRACTICES

The solid waste management practices described in the source reduction, recycling, composting, and special waste components of this document (Section 3 through 6), which are to be continued, expanded, or implemented in the City of Commerce are designed to comply with the integrated waste management hierarchy established by AB 939. Consistent with this hierarchy, the City will promote source reduction activities targeted at decreasing the amount of solid wastes being generated in the City. For wastes that continue to be generated in the City, recycling and composting programs will contribute to diverting waste from disposal to the extent feasible. For wastes that cannot be diverted, the City will ensure that they are landfilled in an environmentally safe manner.

The City's specific source reduction, recycling, composting, and disposal activities that are designed to achieve integrated waste management are as follows.

Source Reduction Programs

- Educational efforts
- Awards
- Nonprocurement source reduction activities

Recycling Programs

- Expanded residential curbside collection (single-family and multifamily)
- At-source separation/collection for businesses
- Materials recovery operations at CREF and at-source processing
- Various supportive policies including:
 - Green waste cover project
 - Transformation
 - Antiscavanging ordinances, business permit requirements, mandatory recycling sources, cooperative marketing, and educational outreach and technical assistance

Composting Programs

- Self-haul drop-off
- Decentralized preprocessing and material storage
- Yard waste composting
- Various supportive policies including: promotion and education, financial incentives, and regulatory measures and policies

Special Waste Programs

- Ash recycling program
- Used tire program
- Construction and demolition waste program
- White goods program

10.2 COMPONENT INTEGRATION

The source reduction, recycling, composting, and special wastes components have been integrated so that one program compliments

another and so that the programs selected for implementation from each component achieve their maximum potential. Initially, mutually exclusive objectives and target materials for each component were developed to prevent or minimize the implementation of programs that compete for a specific material or waste source. With its focus on mutually exclusive programs and activities, the City's SRR element maximizes the use of all feasible source reduction, recycling, and composting options.

Public education and information, and funding for programs will be integrated for time efficiency and cost effectiveness. Staff time required for public education and information will be shared among the components. All funding requirements for residential programs will be provided through the General Fund. Commercial and industrial programs will be funded by a gross receipts fee ranging from 7% to 10% to be paid by the licensed refuse haulers.

10.3 COMPLIANCE WITH DIVERSION MANDATES

The City currently diverts 22.4% of the solid waste generated in the City from disposal. The source reduction, recycling, composting, and special wastes programs selected for implementation are designed to increase this diversion rate starting in the short term in order to reach the medium-term planning period goal of 50% diversion. These new programs will be implemented in coordination with existing diversion programs and planned expansion of these programs. The expected diversion from the integrated programs by component, and planning term is presented in Table 10-1.

Table 10-1

Component Integration Total Waste Stream Diversion

Program	Diversion Percentage	
	Short Term	Medium Term
Source Reduction	0	0
Recycling	3.5	17.9
Composting	0.4	0.4
Special Waste	19.1	19.7
Total Annual Diversion (as generated)	23%	38%
With Existing Diversion (22.4%)	45.4%	60.4%

10.4 COMPONENT PRIORITIES

Certain materials in the waste stream may be diverted from landfilling by a variety of methods. Paper, for example, is a targeted material that may be diverted from landfilling through several programs, including (but not limited to) product reuse, curbside recycling, and commercial recycling.

In developing the City's SRR element, priorities had to be set between components. Priorities were based on regulatory, technical, institutional, and economic considerations. These considerations included:

- results of the solid waste generation study
- consistency with existing waste management practices (local conditions)
- location of the program in the integrated waste management hierarchy
- effectiveness in reducing the volume, weight, or hazard of the targeted wastes

10.5 INTEGRATED SCHEDULE

The integrated schedules for the short-term and medium-term planning periods, shown in Table 10-2, include implementation tasks for new and

expanded programs, and identifies the agency responsible for implementation, and task and milestone dates. Ongoing programs are not addressed in these tables because they are included in each of the individual components. The CDD will be responsible for coordinating the monitoring of the implementation schedules and for determining priorities between component programs.

Table 10-2
City of Commerce
SRRE Implementation
Short-Term Calendar

Component	Alternative	Task	Start Date	Finish Date	Responsibility
Special Waste	Ash Recycling Program	Obtain necessary permits	1/91	12/91	County Sanitation Districts of Los Angeles County (CSD)/ Community Development Department (CDD)
Special Waste	Ash Recycling Program	Construction and treatment operation	5/91	12/91	CREA Authority
Education and Public Information	Residential Education and Information Program	Develop materials	8/91	12/91	Public Information Office
Education and Public Information	Residential Promotional Campaign	Develop campaign	8/91	12/91	Public Information Office
Special Waste	Ash Recycling Program	Operation and maintenance of treatment facility	12/91	ongoing	CREA Authority
Recycling	Business Permit Requirement	Develop potential ordinance and enact	12/91	1/93	CDD/City Council
Education and Public Information	Residential Education and Information Program	Distribute materials	12/91	1/93	Public Information Office
Education and Public Information	Residential Promotional Campaign	Publicize campaign	12/91	6/92	Public Information Office
Source Reduction	Nonprocurement Source Reduction Activities	Pilot in-house program	1/92	6/92	CDD
Special Waste	Ash Recycling Program	Utilization of manufactured product	1/92	ongoing	CSD/CDD
Special Waste	Used Tire Program	Contact existing tire vendors	1/92	2/92	CDD
Special Waste	White Goods Program	Contact private hauler, negotiate collection costs	1/92	3/92	CDD
Special Waste	White Goods Program	Contact local charities, thrift shops and scrap dealers	1/92	3/92	CDD
Recycling	At-Source Recycling Service to all Area Businesses	Review opportunity with hauler	1/92	6/92	CDD

Table 10-2
City of Commerce
SRRE Implementation
Short-Term Calendar (continued)

Component	Alternative	Task	Start Date	Finish Date	Responsibility
Recycling	Policy on Scavenging	Evaluate need for ordinance	1/92	3/92	CDD
Recycling	Contracted or Franchised Recycling Service Provision	Review need	1/92	3/92	CDD
Recycling	Cooperation Marketing	Review markets	1/92	12/92	CDD
Recycling	Cooperation Marketing	Lobby for market expansion	1/92	12/95	CDD
Recycling	Cooperation Marketing	Discuss MDZ with adjoining cities	1/92	2/92	CDD
Recycling	Cooperation Marketing	Prepare application to the CIWMB	1/92	3/92	CDD
Recycling	Procurement Practices	Review existing policies and practices	1/92	6/92	CDD
Recycling	Business Permit Requirement	Set fee structure	1/92	6/92	CDD/Finance
Recycling	City Recovery Program	Review and augment existing program	1/92	6/92	CDD
Recycling	City Recovery Program	Training of staff	1/92	6/92	CDD
Source Reduction	Educational Efforts	Formalize cooperative assistance, management, cost, risk sharing program among cities	1/92	6/92	CDD
Recycling	Mandatory Recycling Service Provided by Hauler	Evaluate need for ordinance	2/92	6/92	CDD
Recycling	Contracted or Franchised Recycling Service Provision	Develop bid package	3/92	6/92	CDD/Finance/City Attorney/City Council
Recycling	Policy on Scavenging	Draft and enact ordinance	3/92	6/92	CDD/City Council
Recycling	City Recovery Program	Purchase equipment	3/92	6/92	CDD
Special Waste	Used Tire Program	Review City procurement guidelines	3/92	4/92	CDD
Special Waste	Used Tire Program	Revise City procurement guidelines	4/92	6/92	CDD/City Attorney
Special Waste	White Goods Program	Schedule collection	6/92	8/92	CDD

Table 10-2
City of Commerce
SRRE Implementation
Short-Term Calendar (continued)

Component	Alternative	Task	Start Date	Finish Date	Responsibility
Source Reduction	Nonprocurement Source Reduction Activities	Full program	6/92	12/95	CDD
Recycling	Contracted or Franchised Recycling Service Provision	Request bids	6/92	10/92	CDD/Finance/City Attorney/City Council
Recycling	Mandatory Recycling Service Provided by Hauler	Draft and enact ordinance	6/92	12/92	CDD/City Council
Recycling	Educational Outreach/Technical Assistance	Design and conduct educational outreach program	6/92	12/92	CDD
Recycling	Business Permit Requirement	Develop planning assistance and filing forms for recycling plans	6/92	12/92	CDD
Source Reduction	Awards	Design award program	7/92	12/92	CDD
Source Reduction	Educational Efforts	Develop and implement promotional campaign	7/92	12/95	CDD
Source Reductin	Educational Efforts	Develop and implement educational materials for residents	7/92	12/95	CDD
Recycling	At-Source Recycling Service to all Area Business	Provide outreach/technical assistance	7/92	12/95	CDD/Private Sector
Education and Public Information	Nonresidential Education and Information Program	Develop materials	7/92	8/92	Public Information Office
Education and Public Information	Nonresidential Education and Information Program	Distribute materials	9/92	12/92	Public Information Office
Special Waste	Construction and Demolition Waste Program	Develop permit application instructions	9/92	12/92	CDD
Special Waste	White Goods Program	Advertise collection	9/92	11/92	Public Information Office
Recycling	Contracted for Franchised Recycling Service Provision	Evaluate bids and accept bidder	10/92	12/92	CDD/Finance/City Attorney/City Council
Special Waste	White Goods Program	Implement program	11/92	ongoing	CDD/City Attorney/City Council
Source Reduction	Awards	Integrate with EPIC	12/92	6/93	CDD

Table 10-2
City of Commerce
SRRE Implementation
Short-Term Calendar (continued)

Component	Alternative	Task	Start Date	Finish Date	Responsibility
Recycling	Contracted for Franchised Recycling Service Provision	Develop contract and contract conditions	12/92	3/93	CDD/Finance/City Attorney/City Council
Education and Public Information	School Curricula Development	Encourage school to develop curricula	12/92	6/93	Public Information Office
Composting	Yard Waste Composting	Develop program and determine facility needs	12/92	6/93	CDD/Private Sector
Composting	Self-Haul Drop-Off	Design collection system	1/93	6/93	Private Haulers/Generators
Composting	Decentralized Preprocessing and Materials Processing	Develop program and determine facility needs	1/93	6/93	Private Sector
Composting	Yard Waste Composting	Market survey	1/93	6/93	CDD
Composting	Yard Waste Composting	Procurement guidelines	1/93	6/93	CDD
Composting	Yard Waste Composting	Product quality standards	1/93	7/93	CDD
Composting	Yard Waste Composting	Technical assistance	1/93	12/94	CDD
Special Waste	Construction and Demolition Waste Program	Revise City ordinance for permit review	1/93	3/93	City Attorney
Recycling	Materials Recovery Facility	Assess feasibility	1/93	12/93	CDD
Education and Public Information	SRR Employment Representative Training Program	Develop training program	1/93	1/94	CDD
Composting	Decentralized Preprocessing and Materials Storage	Enact model zoning ordinance	2/93	7/93	CDD
Education and Public Information	Nonresidential Promotional Campaign	Develop campaign	2/93	5/93	Public Information Office
Education and Public Information	Representative Waste Evaluations	Select a targeted business	3/93	9/93	CDD
Recycling	Procurement Practices	Revise bid specifications, if necessary	3/93	6/93	CDD/Finance
Education and Public Information	Nonresidential Promotional Campaign	Publicize campaign	5/93	8/93	Public Information Office

Table 10-2
City of Commerce
SRRE Implementation
Short-Term Calendar (continued)

Component	Alternative	Task	Start Date	Finish Date	Responsibility
Composting	Self-Haul Drop-Off	Implement collection system	6/93	12/93	Private Haulers/Generators
Composting	Self-Haul Drop-Off	Alternative oversight	6/93	ongoing	CDD
Recycling	Business Permit Requirement	Review business plans	6/93	12/95	CDD
Special Waste	Construction and Demolition Waste Program	Adopt revised ordinance	6/93	6/93	City Council
Special Waste	Construction and Demolition Waste Program	Implement new process	7/93	ongoing	CDD
Composting	Self-Haul Drop-Off	Develop incentive rates	7/93	12/93	CDD
Composting	Self-Haul Drop-Off	Add multiple drop-off sites	As Required	As Required	CDD
Education and Public Information	Representative Waste Evaluations	Conduct waste audit of selected business	10/93	12/93	CDD
Education and Public Information	Representative Waste Evaluations	Publicize results of evaluation	12/93	12/95	Public Information Office
Composting	Yard Waste Composting	Procure facilities	12/93	6/94	Private Sector
Recycling	Materials Recovery Facility	Conduct or supervise CREF siting investigation	1/94	12/94	CDD/Private Sector
Composting	Decentralized Preprocessing and Materials Storage	Procure facilities	1/94	6/94	Private Sector
Composting	Self-Haul Drop-Off	Develop mandatory business license provisions	1/94	6/94	CDD
Education and Public Information	SRR Employment Representative Training Program	Publicize program and recruit representatives	2/94	6/94	Public Information Office
Education and Public Information	SRR Element Representative Training Program	Train SRR element representatives	6/94	12/95	CDD
Composting	Decentralized Preprocessing and Material Processing	Implement program	6/94	12/94	Private Sector

Table 10-2
City of Commerce
SRRE Implementation
Short-Term Calendar (continued)

Component	Alternative	Task	Start Date	Finish Date	Responsibility
Composting	Yard Waste Composting	Implement program	6/94	ongoing	Private Sector
Composting	Yard Waste Composting	Program monitoring and review	6/94	ongoing	CDD
Education and Public Information	SRR Element Representative Training Program	Supervise implementation	12/95	12/96	CDD
Source Reduction	Educational Efforts	Modify and implement motivational campaign	1/96	1/2000	CDD
Source Reduction	Educational Efforts	Modify and implement educational materials for residents	1/96	1/2000	CDD
Source Reduction	Educational Efforts	Modify and implement curricula changes	1/96	1/2000	CDD
Recycling	At-Source Collection	Review opportunity with hauler	1/96	6/96	CDD
Recycling	Materials Recovery Program	Modify CREF for MRF operations	1/96	12/98	CDD/Private Sector
Composting	Decentralized Preprocessing and Materials Storage	Capacity	1/96	6/96	CDD
Composting	Yard Waste Composting	Examine diversion of related wastes	1/96	6/96	CDD
Composting	Yard Waste Composting	Develop/implement yard waste disposal bans	1/96	6/96	CDD/City Council
Composting	Yard Waste Composting	Implement fines for illegal disposal	1/96	6/96	CDD/City Council

Table 10-2
City of Commerce
SRRE Implementation
Short-Term Calendar (continued)

Component	Alternative	Task	Start Date	Finish Date	Responsibility
Education and Public Information	Residential Promotional Campaign	Expand campaign	1/96	12/99	Public Information Office
Education and Public Information	School Curricula Development	Organize and conduct roundtables for schools to share ideas	1/96	12/99	Public Information Office
Source Reduction	Nonprocurement Source Reduction Activities	Modify in-house program	1/96	6/96	CDD
Education and Public Information	Nonresidential Promotional Campaign	Expand campaign	4/96	12/99	Public Information Office
Education and Public Information	Nonresidential Education and Information Program	Organize and conduct seminars and workshops	6/96	12/99	Public Information Office
Source Reduction	Nonprocurement Source Reduction Activities	Full program	6/96	12/99	CDD
Source Reduction	Awards	Re-design award program	7/96	12/96	CDD
Education and Public Information	Representative Waste Evaluations	Publicize results of short-term monitoring and evaluation program	7/96	12/99	CDD
Source Reduction	Awards	Integrated with EPIC	12/96	6/99	CDD
Recycling	At-Source Collection: Expand Recycling	Provide outreach/technical assistance	12/96	12/99	CDD/Public Information Office
Source Reduction	Educational Efforts	Modify and conduct seminars and workshops	1/97	1/2000	CDD
Composting	Yard Waste Composting	Develop mandatory source separation ordinances	1/97	6/97	CDD/City Council
Education and Public Information	Residential Education and Information Program	Organize and conduct seminars and workshops	11/97	12/99	Public Information Office
Education and Public Information	SRR Element Representative	Involve SRR element representative in implementing model programs	11/97	12/99	CDD
Composting	Yard Waste Composting	Develop/implement punitive rate for non-compliance	1/98	6/98	CDD

APPENDIX A

EVALUATION METHODOLOGY FOR ALTERNATIVE DIVERSION PROGRAMS

APPENDIX A

EVALUATION METHODOLOGY FOR ALTERNATIVE DIVERSION PROGRAMS

The AB 939 regulations require a comprehensive and workable set of evaluation criteria to use in selection viable alternatives for the Source Reduction and Recycling (SRR) element. These include 10 criteria stated in the California Integrated Waste Management Board's (CIWMB) Planning Guidelines that must be used in evaluation. It is noted that several additional criteria are used in evaluating alternatives to provide a comprehensive analysis.

While the regulations do not specifically require a numerical scoring system, there is a need to provide quantitative measures by which the Cities can provide SRR elements to the County and the CIWMB, with logical, defensible program selections. Numerical systems, however, can over-simplify an evaluation process, and, in fact, create situations where highly ranked options based on numerical scores may not be suitable or practicable. Consequently, our evaluative system does not rely solely on quantitative analysis, but rather incorporates qualitative procedure to address potential fatal flaws amid political and local demographic circumstances.

To that end, local conditions were assembled on each City that included: 1) goals and objectives, 2) local demographics, and 3) a local conditions survey. These are covered under a different appendix. By combining the quantitative and qualitative aspects, the final selected program will ultimately reflect the local conditions and input from local decisionmakers, while providing some mechanism for orderly selection.

The criteria for evaluation are presented below. They are grouped into three categories: cost effectiveness, technical effectiveness, and institutional risks and impacts.

COST EFFECTIVENESS

Effectiveness in Reducing Waste Quantity [18733.3(a)(1)]

This criteria considers the effectiveness of an alternative in reducing the amount of the targeted solid waste. It is measured by the existing amount of waste targeted for diversion, the anticipated range of participation, the anticipated material recovery rates, and the anticipated materials contamination or rejection levels. Based on these factors, the criterion evaluates the estimated percentage of solid waste reduced or diverted by the alternative. For the purpose of this plan, the following ratings are used:

- Low: Very little diversion is expected.
- Medium: A moderate amount of diversion is expected.
- High: A significant amount of diversion is expected.

Estimated Cost Rating: Short-Term [18733.3(b)(3)]

Short-term cost is the estimated cost related to the alternative, including capital costs and operating costs, over the short-term planning period.

- Low: The cost to implement the alternative is high compared to other alternatives being considered.
- Medium: The cost to implement the alternative is considered mid-range compared to other alternatives being considered.
- High: The cost to implement the alternative is low compared to other alternatives being considered.

Estimated Cost Rating: Medium-Term [18733.3(b)(3)]

Medium-term cost is the estimated cost related to the alternative, including capital costs and operating costs, over the lifecycle of the alternative.

- Low: The cost to implement the alternative is high compared to other alternatives being considered.

- Medium: The cost to implement the alternative is considered mid-range compared to other alternatives being considered.
- High: The cost to implement the alternative is low compared to other alternatives being considered.

Ease of Financing [no regulation]

Depending on the cost, potential for revenue production, and other factors, an alternative can be evaluated in terms of how easy it is to obtain financing for its implementation.

- Low: Difficult to finance for reasons of risk of venture, no revenue production, high capital expense, and lack of prior financing experience.
- Medium: Requires some equity or other performance bonding to obtain financing.
- High: No difficulty to obtain financing.

TECHNICAL CONSIDERATIONS

Absence of Hazards [18733.3(a)(2)]

Absence of hazards refers to the degree of hazard that could result from implementing the alternative. Hazards could include health risks, injury, fire, or public nuisances.

- Low: Potential hazards not understood or the alternative increases the potential hazards.
- Medium: Potential hazards are known and controllable. Some impacts remain.
- High: There are few or no potential hazards or unmitigated impacts.

Flexibility [18733.3(a)(3)]

Flexibility considers the alternative's ability to accommodate changing economic, technological, and soil conditions.

- Low: The alternative has a limited ability to respond to changing conditions.
- Medium: The alternative is anticipated to demonstrate a moderate ability to respond to changing conditions. Significant changes in the program may be required.
- High: The alternative is anticipated to be readily adaptable in meeting changing conditions. No significant changes in the program are necessary.

Limited Shift in Waste Type Generation [18733.3(a)(4)]

This criterion evaluates the consequences of implementing the alternative such as causing shifts in solid waste generation from one type to another.

- Low: The alternative would significantly shift solid waste production to the generation of nonrecyclable, unmarketable, or uncountable materials (under the current regulations).
- Medium: The alternative would result in the creation of little nonrecyclable, unmarketable, or uncountable wastes.
- High: The alternative would not result in the creation of nonrecyclable, unmarketable, or uncountable wastes, or may shift waste generation to more readily recyclable wastes or new markets, or compostable materials.

Technical Reliability [no regulation]

Alternatives that demonstrate continued operation or service, i.e., reliability, under any and all circumstances are favorable. This evaluation considers reliability based on a number of factors, including lifecycle, maintenance, and complexity.

- Low: A lack of reliability demonstrated.
- Medium: No demonstrated reliability.
- High: Demonstrated reliability.

Equipment and Personnel Availability [no regulation]

Alternatives reflect equipment and personnel requirements that range from low technology and existing, to highly technology requiring advanced training and skills not readily found in a jurisdiction. This evaluation considers such factors.

- Low: Alternative requires specialized personnel and equipment.
- Medium: Alternative may require either specialized personnel or equipment.
- High: Alternative can be implemented with existing personnel and equipment.

System Compatibility [no regulation]

One facet of implementation is the compatibility of an alternative with the existing system, including its laws and technologies. This evaluation considers the degree of compatibility of an alternative with other solid waste management systems, economic structures, and planning and engineering aspects of the City.

- Low: Not compatible with the existing systems.
- Medium: Exhibits equal numbers of compatible and incompatible aspects.
- High: Generally compatible with the existing system.

INSTITUTIONAL CONSIDERATIONS AND RISKS

Implementability [18733.3(a)(5)]

Refers to the extent to which an alternative can be implemented in the short or medium term given local conditions and constraints.

- Low: Local conditions preclude implementation until 2000.
- Medium: Local conditions preclude implementation until 1995.
- High: Local conditions do not preclude implementation at any time.

Facility Needs [18733.3(a)(6)]

Facility requirements considers the need for expanding existing facilities or constructing new facilities or infrastructure to support implementation of the alternative.

- Low: New facilities and infrastructure must be developed.
- Medium: Existing facilities and infrastructure must be expanded or altered.
- High: No new or expanded facilities or infrastructure.

Consistency with Local Policies [18733.3(b)(1)]

Consistency with local policies evaluates the alternative's compatibility with existing local plans, policies, ordinances, and other institutions, based on local conditions.

- Low: The alternative would require major local changes.
- Medium: The alternative would require minor changes.
- High: The alternative would not require any changes.

Absence of Institutional Barriers [18733.3(b)(2)]

This evaluates the extent to which barriers such as long-term franchise agreements, contracts, permit requirements, or other factors may impact implementation of the alternative.

- Low: The alternative is affected by existing barriers that are not controllable by the City.

- Medium: The alternative is affected by existing barriers over which the City has some control.
- High: There are no known existing barriers to the implementation of the alternative.

End Uses [18733.3(b)(4)]

End uses accounts for the marketing of the materials in question.

- Low: End uses are currently nonexistent or unreliable.
- Medium: End uses exist but are subject to fluctuations.
- High: End uses exist now and are stable.

Public Acceptability [no regulation]

An alternative may be more acceptable to the general public because the alternative aligns with environmental wishes, is cost effective, or improves the standard of living in a real or perceived way. This evaluation considers such factors in determining the acceptability of an alternative at implementation and over its lifecycle.

- Low: Unacceptable to the public under any circumstance.
- Medium: Acceptable only under certain circumstances.
- High: Acceptable under most circumstances.

Private Acceptability [no regulation]

An alternative may be more acceptable to the private sector because the alternative aligns with its environmental wishes, is cost effective, or improves the business climate and profitability in a real or conceptual way. This evaluation considered such factors in determining the acceptability of an alternative at implementation and over its lifecycle.

- Low: Unacceptable under any circumstance.
- Medium: Acceptable only under certain circumstances.
- High: Acceptable under most circumstances.

Private Sector Participation Potential [no regulation]

The intent of AB 939 is clearly defined within the regulations as something that should be encouraged and actively solicited; private sector participation could be a "litmus test" for the practicability of a program. This evaluation considers whether an alternative provides for adequate private sector participation.

- | | |
|---------|---|
| Low: | No opportunity for participation. |
| Medium: | Some opportunity for participation. |
| High: | Private sector program or good opportunity for participation. |

To develop the SRR element, the City undertook a series of planning steps that identified potential and actual alternatives to reduce, recycle, and compost solid waste disposed in the jurisdiction. The seven steps were:

- Establish goals and objectives of the City
- Review existing conditions
- Describe alternatives for a potential program
- Evaluate alternatives
- Configure alternatives into diversion systems and make recommendations
- Portray implementation timeline, task requirements, and costs
- Develop a monitoring and evaluation strategy

To establish the goals and objectives of the City, meetings were held with key City decisionmakers to solicit input on public awareness and concerns. Examples of potential goals and objectives were provided, to be used by the City in formulating its own goals and objectives. These were received by the City's consultants and used to develop the initial draft of the statement of goals and objectives for each component.

The City also assembled key documents and solicited information about private and public sector characteristics and activities in the City concerning solid waste diversion and management. This local survey

information was relied upon to identify local conditions that were instrumental in actual evaluation.

Based on local conditions, the City was included in a group of cities that exhibited common characteristics. This grouping provided a rational basis for comparing the City with others. This grouping was used only as the initial design basis for program development, but as the costs of diversion can be high, the grouping may prove invaluable when the City and adjoining Cities begin to implement their programs.

Using local conditions and the goals and objectives, the City evaluated several potential alternatives that could be configured to form a program. Initially, all alternatives were screened in a preliminary manner to eliminate those alternatives that would prove untenable for the City for economic, environmental, institutional, technical, or marketing reasons.

The remaining alternatives were fully evaluated against ten basic criteria required by the CIWMD and several additional criteria. These criteria are grouped into cost, technical, and institutional areas. Each was applied to the alternatives, yielding a high (H), medium (M), or low (L) result. High ratings were positive for alternatives and implied greater success in implementation, while low ratings were negative and implied greater difficulty in implementation. After integrating the results of this analysis with local conditions, goals and objectives, existing diversion rates, and other relevant considerations, alternatives were selected and configured into a system for diversion in each of the three components--recycling, source reduction, and composting.

APPENDIX B

- B-1: Study Methodology/CIWMB Response Letters**
- B-2: Waste Hauler Survey Form**
- B-3: SIC Codes**
- B-4: Waste Sorting Plan**
- B-5: Waste Sampling Calculations (Klee and Carruth)**
- B-6: Waste Sampling Results/Data Sheets**
- B-7: Existing Comparable Data**
- B-8: Analysis of Variance Formulas**
- B-9: Puente Hills Recycle, Survey Results
United Pacific Corporation, Survey Results**
- B-10: Household Source Reduction and Recycling Survey Forms**
- B-11: Household Survey Statistical Calculations**
- B-12: Certified Redemption Centers/Commercial Recyclers**

APPENDIX B-1

STUDY METHODOLOGY/CIWMB RESPONSE LETTERS

Clements Engineers, Inc.

ENVIRONMENTAL ENGINEERING

via FAX:

February 11, 1991

Ms. Yasmin Satter
California Integrated Waste Management Board
1020 Ninth Street Suite 300
Sacramento, California 95814

Re: Southeast Area Cities, Los Angeles County

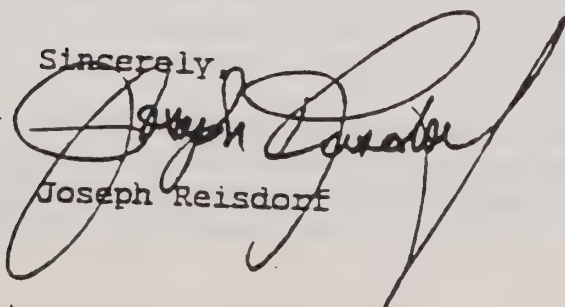
Dear Yasmin:

Following are the residential and commercial groupings of the cities in the Southeast Area Integrated Waste Management Working Group that we plan to use for our Waste Characterization Study. These groupings were based on comparisons of the characteristics of the residential and commercial sectors of each city, as described in our methodology.

I am also forwarding a schedule for the verification sampling that we plan to conduct for each grouping. Our sampling will take place at the Paramount Resource Recycling Facility in the City of Paramount. The loads to be sampled will be selected at random from the routes of the haulers in the respective cities. A 200 pound sample will be liberated from each load and sorted into the 8 waste categories and 34 waste types. We will rely on a visual survey to determine the composition of the industrial loads.

If you have any comments or questions regarding or sampling plan please call me.

Sincerely,



Joseph Reisdorf

Printed on Recycled Paper

CALIFORNIA INTEGRATED WASTE MANAGEMENT BOARD

1020 Ninth Street, Suite 300
Sacramento, California 95814



February 7, 1991

Mr. Joseph Reisdorf
Clements Engineers, Inc.
6290 Sunset Blvd, Suite 1223
Los Angeles, CA 90028

Re: Waste Generation Study Methodology For Southeast Area

Dear Mr. Reisdorf:

The California Integrated Waste Management Board (Board) staff has reviewed the waste characterization study for cities in the Southeast area and the unincorporated areas of Los Angeles County within this area.

The waste characterization study appears to comply with the requirements of the Proposed Final Regulations (Article 6.1) as presented to the Board on December 5, 1990, for solid waste generation studies (SWGS). However, the following concerns/comments need to be addressed:

1. Page 1. Please include a copy of the pre-existing comparable data you will be using, when submitting your waste generation study draft.
2. Page 2. Upon Mr. Northrop's request, a list of the types of information that show comparability between jurisdictions, or that can serve as a basis for disaggregating data from joint studies, was faxed on January 22, 1991. Please add these information types to your list. Also, please explain what is meant by "other sources" in the phrase: "other sources will be used to obtain the number of employees".
3. Page 7. " The field sampling of "selected" loads will be conducted"- Does this mean that loads will not be selected at random? Representative sampling is acceptable for initial solid waste generation studies. However, subsequent waste generation studies need to be statistically representative, so the loads sampled must be randomly selected.
4. Page 7. To appropriately allocate the diversion data, please use the same information as we suggested for comparability, and for disaggregating data. We have included another copy of these information types for your convenience.

Thank you for the opportunity to review your waste generation study methodology. If you have any questions, please call Yasmin Satter at (916) 323-5361.

Sincerely,


John D. Smith, Chief
Local Planning Division

cc: Yasmin Satter
WGA Branch File

Type of Program	Tons Diverted
City Curbside	XXX
Office Paper Recycling	XXX
Transfer Station	XXX
Commercial Recyclers	XXX
Redemption Centers	XXX
Tire Recyclers	XXX
Wood Processors	
.	
.	
.	
Total	XX,XXX

VII. SEASONAL VARIATIONS

Waste haulers are being requested to provide both monthly and annual totals of the waste collected in the cities. The haulers will also identify any seasonal variations in the waste generation patterns of the cities. The reasons for the variations will also be listed (e.g. weather, tourism, business cycles).

VIII. 15 YEAR PROJECTIONS

Projections of the changes in current waste disposal, diversion, and generation will be made for the period 1992 to 2010. The projections will be based on population growth projections prepared by the cities and supplemented with data from the Southern California Association of Governments. The local chambers of commerce will be surveyed for information on trends in commercial and industrial activity.

IX. REPORTS

Separate Waste Characterization Components will be prepared for each city in the Working Group, with the exception of Santa Fe Springs and Signal Hill. These components will summarize the actual waste disposal and diversion data collected for each city and will include the waste characterization profile developed during the Waste Characterization Study.

The waste generation of each city will be determined by adding the waste disposal and diversion data. The composition of the waste generated will be determined by multiplying the waste generated by the percentages of each component of the waste stream. An example of the type of waste generation profile that will be produced is as follows:

City A:

Total Waste Generation: XX,XXX tons/year

Residential Waste Generation: XX,XXX tons/year

Composition of Residential Waste Generation:

Component	Percent in Waste Stream	Total Generated
Paper		
Corrugated	5%	XXX
Mixed Paper	10%	XXX
Newspaper	8%	XXX
High Grade	2%	XXX
Other	4%	XXX
Plastics		
HDPE	1%	XXX
PET	1%	XXX
Film	1%	XXX
Other		
.		
.		
.		
.		

A similar table will be prepared for the commercial and industrial components of the waste stream, as well as for the total waste stream.

January 16, 1991

completed and the applicable representative data assembled. Based on information obtained from the haulers, specific routes to be sampled will be identified and directed to the sampling location. Samples of approximately 200 lbs. each will be selected from each load and sorted into the 37 waste types. The total weight of the sample and the weights of the individual components will be recorded.

Source Sampling

A limited amount of source sampling will be conducted to obtain more detailed information on the waste characterization of up to ten of the major generators in the groupings. The contents of the waste bins of the selected generators will be sampled either at the generator's location or the sampling yard. Data from source sampling will be supplemented with information in the trade literature or from trade organizations to obtain the waste generator profiles of the desired generators.

A similar method will be used to determine the waste characterization of the industrial sectors of each grouping.

Waste Sampling Location

The field sampling of selected loads will be conducted at the Paramount Resource Recycling Facility in the City of Paramount.

VI. WASTE DIVERSION STUDY

Existing Recycling:

The waste diversion portion of the WGS will identify the types and volumes of waste currently being diverted from local waste disposal and transformation facilities. The techniques that will be employed to develop this information are as follows:

- Obtain information by conducting telephone and mail surveys of all:

commercial recyclers
certified redemption centers
concrete and asphalt crushers
groceries and major retailers
wood & green waste processors
schools & colleges
charities and non-profit groups

transfer stations
scrap metal dealers
paper brokers and packers
newspaper publishers
tire recyclers
waste haulers

municipal parks, street maintenance, solid waste and/or recycling departments

The sources of information will be assured of the confidentiality of their information.

- Data will be obtained for the most recently available six month period (May to October 1990), or typical monthly data if that is all that is available, and projected for the same 12-month period as for the waste disposal characterization study.
- Allocation of diversion tonnages to Cities and unincorporated areas and cross-checking of data to eliminate double counting.

Source Reduction Activities:

- Identification of potential source reduction activities that should be sampled (diaper services, appliance repair businesses, etc.)
- Telephone survey of commercial businesses involved in source reduction. The number of samples and survey methodology will be calculated so that the results will be representative of the total population.
- Telephone survey of residences to determine the extent of source reduction activities, such as repair rather than replacement of appliances, use of commercial diaper services, and use of slow growing, native yard vegetation.
- Allocation of diversion tonnages to the cities and unincorporated areas and cross-checking of data to eliminate double counting.

The results of the Waste Diversion Study will be in the following form:

City A:

Type of Material	Residential	Commercial	Industrial
Corrugated	XXX	XXX	XXX
Newspaper	XXX	XXX	
Aluminum Cans	XXX	XXX	
Ca Redemption Glass	XXX	XXX	
Other Glass	XXX	XXX	
Metals		XXX	XX
.			
.			
.			
Totals	XX,XXX	XX,XXX	XX,XXX

Direct Haul by Municipal Crews

The local, county, and state Public Works, Transportation, and Parks departments operating in the area will be surveyed to determine the amount of waste hauled directly to local landfills.

Private Self-Haulers

It is likely that within the Working Group there are some residents and private businesses or industries that haul their waste directly to local landfills without the involvement of one of the licensed refuse haulers. For this study, two approaches will be taken to estimate the volume of self-haul waste.

- The largest businesses and industries within the Working Group area will be surveyed to determine the extent of their self-haul activities.
- The operators of local landfills will be interviewed to determine the percentage of in-coming waste that is brought to their facilities by local residents. These percentages will be applied to each city based on the demographic make-up to develop an approximation of the residential self-haul volumes.

The data produced from the Waste Disposal Study will be in the following form:

City A: (tons/year)

Source	Residential	Commercial	Industrial
Municipal Collection	XXXX	XXXX	XXXX
Franchise Haulers	XXXX	XXXX	XXXX
Other Private Haulers	XXXX	XXXX	XXXX
City Crews	XXXX	XXXX	XXXX
Private Self-Haul	XXXX	XXXX	XXXX
Total	XX,XXX	XX,XXX	XX,XXX

V. WASTE CHARACTERIZATION STUDY

The purpose of the waste characterization portion of the WGS is to determine the approximate composition, by material type, of the residential, commercial, and industrial components of the waste stream in each city and the unincorporated areas. The composition will be described according to the eight (8) waste categories and 37 waste types defined in the CIWMB regulations.

The actual characterization methodology will rely on the use of comparative data from jurisdictions with similar characteristics and actual field sampling for verification. For the purposes of the characterization analysis, a grouping of cities will be considered as a single city. However, individual waste characterization reports will be prepared for each city and a single report for the unincorporated areas.

Residential Waste Characterization:

It is anticipated that very little field sampling will be required to determine the composition of the residential waste streams. Existing characterization data from other jurisdictions with similar single family and multi-family populations will be used to develop an approximation for each residential grouping. To the extent possible, separate data for the single family and multi-family populations will be used.

Sampling of residential loads will be undertaken if no comparative data for a specific residential grouping can be found. The exact number of loads will be determined after the groupings have been completed and the available comparative data assembled. Routes within the target groupings will be selected and diverted to the sampling yard. Samples of approximately 200 lbs. each will be selected from the loads and sorted into the 37 waste types.

Commercial and Industrial Waste Characterization:

Each city grouping will be considered as a single city. Comparative data from cities with similar commercial profiles will be used to approximate the characteristics of the commercial waste stream for each city grouping. Composition data from the cities of Santa Fe Springs and Signal Hill will be used to represent the characterization of the commercial waste streams of the city groupings in which two these cities are included.

To validate the use of the comparative data, actual field sampling of select commercial loads will be conducted. The exact number of loads to be sampled will be determined after the city groupings are

An example of a typical commercial profile is as follows:

City A:

Mix of Business Types

SIC	Type	Total # of Business	% of Total Business	Business With > 25 Employees
541	Grocery Stores	8	5%	8
549	Misc. Food Stores	12	10%	12
565	Clothing Stores	15	10%	5
5812	Restaurants	20	15%	5
5813	Bars	30	20%	30
602	Banks	5	4%	3

Largest Employers

Name	# Employees
Mid City Hospital	350
Falcon Aircraft Corp.	300
City A	285
Beta Manufacturing	200

Similar sources will be used to develop the profile of the industrial sector of each city. The format and structure of the industrial profiles will resemble that of the commercial profiles.

III. GROUPING OF CITIES

Purpose of Grouping

Grouping of the cities will enable the cities in the Working Group to take advantage of the similarities in their residential, commercial, and industrial sectors to reduce the cost of the preparation of the Waste Characterization Studies. Rather than conduct separate waste characterization studies for each city, the project team will conduct a single study for each group of cities, and then apply the results to each city within the group.

Process

All cities and the unincorporated areas within the Working Group will be placed into residential, commercial, and industrial groupings according to similarities in their profiles. Three separate groupings will be made and it is possible that a city will

be matched with one group of cities according to similarities in their residential sectors, but then with another group of cities based on similarities in their commercial sectors. Following is an illustration of the groupings that may result from this process.

Residential Grouping

Group 1:	City A	Group 2:	City D	Group 3:	City F
	City B		City E		City G
	City C				City H

Commercial Grouping

Group 1:	City A	Group 2:	City B	Group 3:	City F
	City C		City E		City D
	City G		City H		

Industrial Grouping

Group 1:	City A	Group 2:	City D
	City B		City D
	City E		City H
	City F		
	City G		

The exact number of groups and the number of cities in each group will be determined by the profiles of each city.

IV. WASTE DISPOSAL STUDY

A waste generation analysis will be conducted to determine the total waste generated by the residential, commercial, and industrial sectors of each of the cities and unincorporated areas in the Working Group. Three sources will be investigated to determine this total:

Private Refuse Haulers

Detailed surveys will be mailed to all of the haulers operating in the cities in the Working Group. The surveys will request the haulers to indicate the amount of residential (single and multi-family), commercial, and industrial waste, and the amount of construction and demolition debris and "other" waste collected in each of the cities. The haulers will also be asked to identify their existing diversion or recycling programs and to indicate the types of collection vehicles used.

SOUTHEAST AREA INTEGRATED WASTE MANAGEMENT
WORKING GROUP

WASTE GENERATION STUDY METHODOLOGY

A Waste Generation Study (WGS) will be undertaken to determine the quantity and composition of the municipal solid waste generated, disposed of, and diverted or recycled in the Southeast Area Integrated Waste Management Working Group cities. The objectives of this study will be to comply with the requirements of State laws AB 939 and AB 1820 and the planning regulations and guidelines prepared by the California Integrated Waste Management Board (CIWMB). The results of the Study will provide the basis for the Source Reduction and Recycling Elements that will be prepared for each city in the Working Group.

The general approach to the WGS will be based on the use of pre-existing solid waste composition data from jurisdictions with similar characteristics, as permitted in the CIWMB guidelines. The use of the data from other jurisdictions will be supplemented with selected field sampling to verify assumptions and provide commercial and industrial characterization data for certain groupings of cities.

Two of the cities in the Working Group (Santa Fe Springs and Signal Hill) have recently completed Waste Generation Studies for their jurisdictions. The information in these studies will be used to approximate the waste stream characterization of other cities in the Working Group with similar demographic, economic, and solid waste characteristics.

I. BACKGROUND

The Southeast Area Integrated Waste Management Working Group includes the twenty two cities and unincorporated areas in the southeastern section of Los Angeles County. This area is approximately bounded on the north by the City of Los Angeles, on the west by the Harbor Freeway, on the south by the San Diego Freeway (except the City of Signal Hill), and on the east by Orange County. The cities in the Working Group include:

Artesia	Bell	Bellflower
Bell Gardens	Cerritos	Commerce
Compton	Cudahy	Downey
Hawaiian Gardens	Huntington Park	Lakewood
La Mirada	Lynwood	Maywood
Norwalk	Paramount	Pico Rivera
Santa Fe Springs	Signal Hill	South Gate
Whittier		

The following unincorporated areas of Los Angeles County within this area are also included in the Working Group:

Rancho Dominguez	East Compton
Willowbrook	Walnut Park
Florence	City Terrace
East L.A.	

The Working Group represents a highly urbanized cluster of cities with a variety of industrial, commercial, and residential land uses. The total population (1990) of the cities is 1,054,000. With the county unincorporated areas included, the total population of the Working Group is 1,369,500 (source: City Planning Departments and the Southern California Association of Governments).

The per capita income of the cities ranges from \$5,400 to \$13,650 (source: Local Conditions Surveys and the California Department of Finance).

II. DEVELOPMENT OF CITY PROFILES

To provide the basis for a comparison and grouping of the cities in the Working Group and the use of waste composition data from other sources, a residential, commercial, and industrial profile of each city will be developed.

The residential profile will be composed of the following information, utilizing information from the Local Conditions Surveys, the City Planning Departments, and the California Department of Finance:

- total population
- demographic breakdown of the population
- income/household or per capita income
- average persons/household
- median home value
- land use (percent single family, multi-family, commercial, etc.)
- mix of single and multi-family units

The commercial profile will be based on the types and number of commercial businesses in the community. Using city business license information and data from the Pacific Bell Business Listing Service, the total number of businesses in each SIC category will be determined. Other sources will be used to obtain the number of employees of the businesses in these categories. The cities have identified the major employers in their cities on the Local Conditions Surveys that they completed.

APPENDIX B-2

WASTE HAULER SURVEY FORM

SOUTH EAST AREA AB 939 WORKING GROUP
WASTE HAULER SURVEY

Complete this survey for the City of: _____

Completed by: _____ Company: _____

Address: _____

Phone: _____

When completed, please return this survey by January, 7, 1991, to:

Tim Northrop
Clements Engineers, Inc.
6290 Sunset Blvd, Ste 1223, Los Angeles, CA 90028.

This information will be kept CONFIDENTIAL.

PART ONE - COLLECTION AND DISPOSAL

- A. What collection and disposal services do you provide for this city? Place a check next to appropriate services listed below.

_____ Waste Collection
_____ Waste Transfer

_____ Waste Disposal
_____ Street Sweeping

- B. Where do you dispose of the waste you collect?

<u>Facility</u>	<u>% of Total Waste You Collect in this City Disposed at Facility</u>
Transfer Station (Facility Name) _____	_____ %
Landfill	
(Landfill Name) 1. _____	_____ %
2. _____	_____ %
3. _____	_____ %
Other type of facility (Facility Name) _____	_____ %
	100%

- C. 1. Waste that you collect for the purposes of this survey should be identified by the sources listed in bold below.

Column One: Write in number of accounts for each source in this city
Column Two: Write in average number of tons you collect per month for each source in this city
Column Three: Write in the total tons handled in last 12 months for each source in this city

<u># of Accts</u>	<u>Average Tons per Month</u>	<u>Total Tons last 12 Months</u>	
_____	_____	_____	Residential (single-family homes, apartments, condominiums, other residential units)
_____	_____	_____	Commercial (stores, offices, warehouses, educational, healthcare, correctional facilities, schools, hospitals, government offices, etc.)
_____	_____	_____	Industrial (mechanized manufacturing facilities, factories, refineries, and publicly-operated treatment works)
_____	_____	_____	Marine (marine vessels and ocean work platforms, waste washed onto beaches, and litter discarded on beaches)
_____	_____	_____	Construction/Demolition (building materials; and rubble and packaging resulting from construction, remodeling, repair, and demolition of pavements, houses, commercial buildings, and other structures.
_____	_____	_____	Other Sources (specify) _____

2. On the following page, more detailed information is requested regarding the type of equipment used to service your accounts, and a month-by-month breakdown of the tonnage picked up by each type of equipment. Please complete this section if data is available.

3. **Seasonal variations.** Does the quantity of waste increase or decrease during particular times of the year due to the factors listed below?

	Change Occurs During What Months?	Percent Change (+,-)	Reason
Climate	_____	_____	_____
Tourists	_____	_____	_____
Trade/Commerce	_____	_____	_____

PART TWO - RECYCLING AND COMPOSTING

- A. What **recycling** and **composting** services do you provide for this city? Place a check next to appropriate services listed below. If none, so indicate and do not continue with the survey.

_____ Curbside Recycling
_____ Composting
_____ Buy-Back Recycling Center
_____ Separate Green Waste Collection
_____ Industrial (Roll-Off Account) Recycling
_____ Commercial Account Recycling
_____ Recyclable Material Processing
_____ None

- B. For each material type that you recycle, list the name of the material, indicate its source (R=residential, I=industrial, C=commercial, O=other; see definitions page 2), the average number of tons recycled a month, and the destination or purchaser of that material.

<u>Material Type</u>	<u>R/I/C/O</u>	<u>Av. Tons Per Month</u>	<u>Destination or Purchaser of Material</u>
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

- C. **Seasonal variations.** Does the quantity of recyclables or compostables increase or decrease during particular times of the year due to the factors listed below?

	<u>Change Occurs During What Months?</u>	<u>Percent Change (+, -)</u>	<u>Reason</u>
Climate	_____	_____	_____
Tourists	_____	_____	_____
Trade/Commerce	_____	_____	_____

APPENDIX B-3

SIC CODES

COMMERCIAL SIC CODES

WHOLESALE TRADE

<u>CODE</u>	<u>SHORT TITLE</u>
52	Building Materials & Garden Supplies
53	General Merchandise Stores
54	Food Stores
55	Automotive Dealers & Service Stations
56	Apparel & Accessory Stores
57	Furniture & Home Furnishings Stores
58	Eating & Drinking Places
59	Misc. Retail

FINANCE, INSURANCE, & REAL ESTATE

<u>CODE</u>	<u>SHORT TITLE</u>
60	Banking
61	Credit Agencies other than Banks
62	Security, Commodity Brokers & Services
63	Insurance Carriers
64	Insurance Agents, Brokers, & Service
65	Real Estate
66	Combined Real Estate, Insurance, Etc.
67	Holding & Other Investment Offices

SERVICES

<u>CODE</u>	<u>SHORT TITLE</u>
70	Hotels & Other Lodging Places
72	Personal Services
73	Business Services
75	Auto REpair, Services, & Garages
76	Misc. Repair Services
78	Motion Pictures
79	Amusement & Recreation Services
80	Health Services
81	Legal Services
82	Educational Services
83	Social Services
84	Museums, Botanical, Zoological Gardens
86	Membership Organizations
88	Private Households
89	Misc. Services

INDUSTRIAL SIC CODES

MINING

<u>CODE</u>	<u>SHORT TITLE</u>
10	Metal Mining
11	Anthracite Mining
12	Bituminous Coal & Lignite Mining
13	Oil & Gas Extraction
14	Nonmetallic Minerals, Except Fuels

CONSTRUCTION

<u>CODE</u>	<u>SHORT TITLE</u>
15	General Building Contractors
16	Heavy Construction Contractors
17	Special Trade Contractors

MANUFACTURING

<u>CODE</u>	<u>SHORT TITLE</u>
20	Food & Kindred Products
21	Tobacco Manufactures
22	Textile Mill Products
23	Apparel & Other Textile Products
24	Lumber & Wood Products
25	Furniture & Fixtures
26	Paper & Allied Products
27	Printing & Publishing
28	Chemicals & Allied Products
29	Petroleum & Coal Products
30	Rubber & Misc. Plastics Products
31	Leather & Leather Products
32	Stone, Clay, & Glass Products
33	Primary Metal Industries
34	Fabricated Metal Products
35	Machinery, Except Electrical
36	Electric & Electronic Equipment
37	Transportation Equipment
38	Instruments & Related Products
39	Miscellaneous Manufacturing Industries

TRANSPORTATION & PUBLIC UTILITIES

<u>CODE</u>	<u>SHORT TITLE</u>
40	Railroad Transportation
41	Local & Interurban Passenger Transit

- 42 Trucking & Warehousing
- 43 U. S. Postal Service
- 44 Water Transportation
- 45 Transportation By Air
- 46 Pipe Lines, Except Natural Gas
- 47 Transportation Services
- 48 Communication
- 49 Electric, Gas, & Sanitary Services

APPENDIX B-4

WASTE SORTING PLAN

SOUTHEAST AREA CITIES - Sorting Plan

RESIDENTIAL LOADS

Group 1

#	Type	City	Hauler	Date
1	Multi-Family	Commerce	Metropolitan	08-Feb
10	Multi-Family	Bell	Consolidated	12-Feb
12	Multi-Family	Bell	Consolidated	12-Feb
6	Single Family	Commerce	Metropolitan	12-Feb
11	Single Family	Maywood	Consolidated	12-Feb
17	Single Family	Huntington Park	Western	13-Feb
18	Single Family	Cudahy	Consolidated	13-Feb
Total Group 1 Loads				7

GROUP 2

#	Type	City	Hauler	Date
2	Multi-Family	Pico Rivera	Metropolitan	08-Feb
3	Multi-Family	Paramount	Metropolitan	08-Feb
5	Single Family	Pico Rivera	Metropolitan	12-Feb
7	Single Family	Paramount	Metropolitan	12-Feb
22	Single Family	Artesia	Consolidated	13-Feb
Total Group 2 Loads				5

GROUP 3

#	Type	City	Hauler	Date
4	Multi-Family	La Mirada	Metropolitan	08-Feb
38	Single Family	Cerritos	Cal San	19-Feb
20	Single Family	Whittier - City	Consolidated	13-Feb
19	Single Family	Whittier - Cnty	Consolidated	13-Feb
16	Single Family	Downey	Cal San	13-Feb
15	Single Family	Cerritos	Cal San	13-Feb
21	Single Family	La Mirada	Consolidated	13-Feb
37	Single Family	Lakewood	B.Z. Disposal	19-Feb
Total Group 3 Loads				8

Total Residential Loads 20

COMMERCIAL GROUPS

GROUP 1

#	Type	City	Hauler	Date
13	Commercial	Bell	Metropolitan	13-Feb
14	Commercial	Bell Gardens	Metropolitan	13-Feb
26	Commercial	Bellflower	Cal San	15-Feb
30	Commercial	Compton	Western	15-Feb
31	Commercial	Compton	Western	15-Feb
35	Commercial	Lynwood	Western	19-Feb
39	Commercial	Artesia	Consolidated	19-Feb
41	Commercial	Maywood	Klintoff	20-Feb
42	Commercial	Bell	Klintoff	20-Feb

Total Group 1 Loads 9

GROUP 2

#	Type	City	Hauler	Date
8	Commercial	La Mirada	Metropolitan	12-Feb
9	Commercial	Paramount	Metropolitan	12-Feb
23	Commercial	Commerce	Metropolitan	15-Feb
24	Commercial	Pico Rivera	Metropolitan	15-Feb
32	Commercial	Pico Rivera	Metropolitan	19-Feb
33	Commercial	Commerce	Metropolitan	19-Feb

Total Group 2 Loads 6

GROUP 3

#	Type	City	Hauler	Date
25	Commercial	Downey	Metropolitan	15-Feb
27	Commercial	Whittier	Consolidated	15-Feb
28	Commercial	Cerritos	Cal San	15-Feb
29	Commercial	Norwalk	Consolidated	15-Feb
34	Commercial	Cerritos	Cal San	19-Feb
36	Commercial	Downey	Metropolitan	19-Feb
40	Commercial	Whittier	Consolidated	19-Feb

Total Group 3 Loads 7

Total Commercial Loads 22

APPENDIX B-5

WASTE SAMPLING CALCULATIONS (KLEE AND CARRUTH)

SAMPLE SIZE CALCULATION USING KLEE & CARRUTH METHODOLOGY

$$n = (z * s/T)^2$$

n = number of samples
z = normal standard deviate for desired confidence level
s = estimated standard deviation
T = sensitivity

At 90% confidence level: z = 1.645
 s = .1632

Residential Group 1

Determining commodity - yard waste

Mean .167
Precision +/- .05

X = .167
X + d = .217

Y = .96911 - .8419
 = .1271

$$n = ((1.645 * .1632)/.1271)^2$$
$$= 4.5$$

Residential Group 2

Determining Commodity - yard waste

Mean 22.2%
Precision +/- 5%

X = .222
X + d = .272

Y = 1.0928 - .9764
 = .1164

$$n = ((1.645 * .1632)/.1164)^2$$
$$n = 5.3$$

Residential Group 3

Determining Commodity - yard waste

Mean 21.2%
Precision +/- 5%

$X = .212$
 $X + d = .262$

$Y = 1.0746 - .95696$
 $= .11768$

$n = ((1.645 * .1632)/.11768)^2$

$n = 5.2$

Commercial Group 1

Determining Commodity - Corrugated

Mean 16.1%
Precision +/- 5%

$X = .161$
 $X + d = .211$

$Y = .9521 - .8230$
 $= .1291$

$n = ((1.645 * .1632)/.1291)^2$

$n = 4.3$

Commercial Group 2

Determining Commodity - Food Waste

Mean 22.4%
Precision +/- 5%

$X = .224$
 $X + d = .274$

$Y = 1.10176 - .98600$
 $= .11576$

$n = ((1.645 * .16302)/.11576)^2$

$n = 5.4$

Commercial Group 3

Determining Commodity - Food Waste

Mean 18.7%
Precision +/- 5%

$X = .187$
 $X + d = .237$

$Y = 1.01685 - .89436$
 $= .1225$

$n = ((1.645 * .1632)/.1225)^2$

$n = 4.8$

APPENDIX B-6

WASTE SAMPLING RESULTS/DATA SHEETS

Group C2

Sample # Date City Type	23 15-Feb Comm. Commercl	8 12-Feb LaMirada Commercl	9 12-Feb Paramnt Commercl	24 15-Feb Pico Commercl	32 19-Feb Pico Commercl	33 19-Feb Comm. Commercl	Group Total	% of Group	% of Category
Paper									
Newsprint	11.2	2.6	6.2	5.8	18.2	18.0	62.0	3.9%	9.9%
Corrugated	45.6	54.1	54.2	101.1	34.8	35.6	325.4	20.5%	52.2%
High Grade	2.2	14.2	0.0	0.2	2.6	12.8	32.0	2.0%	5.1%
Mixed	18.9	19.0	2.6	7.6	35.6	22.8	106.5	6.7%	17.1%
Contaminated	23.8	17.0	7.6	6.6	9.5	32.8	97.3	6.1%	15.6%
								39.2%	100.0%
Plastics									
Containers	0.3	9.9	0.0	0.0	0.0	0.5	10.7	0.7%	8.3%
PET	0.3	0.0	0.0	0.0	0.0	0.0	0.3	0.0%	0.2%
HDPE	4.0	0.5	15.2	0.1	1.0	0.3	21.1	1.3%	16.5%
Film	5.4	11.0	5.1	14.6	8.6	10.6	55.3	3.5%	43.1%
Poylstyrene	5.4	0.8	0.7	0.1	7.0	12.1	26.1	1.6%	20.4%
Other	2.6	2.8	3.5	1.4	2.6	1.8	14.7	0.9%	11.5%
								8.1%	100.0%
Glass									
CA Redemption	9.9	1.9	9.7	1.0	6.1	5.8	34.4	2.2%	70.2%
Containers	4.9	0.1	3.3	2.3	3.5	0.0	14.1	0.9%	28.8%
Other	0.5	0.0	0.0	0.0	0.0	0.0	0.5	0.0%	1.0%
								3.1%	100.0%
Metals									
Al Cans	0.5	0.3	0.3	0.1	0.5	0.0	1.7	0.1%	1.9%
Tin Cans	3.6	0.2	0.7	2.6	6.0	2.2	15.3	1.0%	16.9%
Ferrous	13.3	0.6	0.0	0.0	20.8	0.0	34.7	2.2%	38.3%
Nonferrous	1.3	0.0	0.0	0.0	0.7	0.6	2.6	0.2%	2.9%
White Goods	0.0	0.0	0.0	0.0	0.0	24.3	24.3	1.5%	26.8%
Mixed Metals	1.9	0.5	8.9	0.0	0.0	0.8	12.1	0.8%	13.3%
								5.7%	100.0%
Yard Waste									
Grass/Leaves	40.6	0.0	2.8	0.0	0.0	0.0	43.4	2.7%	53.3%
Prunings	0.0	0.0	0.0	0.0	24.0	14.0	38.0	2.4%	46.7%
								5.1%	100.0%
Organic									
Food	33.5	72.1	50.0	48.6	77.8	74.2	356.2	22.4%	60.2%
Wood	23.8	47.1	17.7	74.6	11.4	0.0	174.6	11.0%	29.5%
Tires	0.7	0.0	0.0	0.0	0.0	0.0	0.7	0.0%	0.1%
Manure	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0%	0.0%
Diapers	8.1	0.0	0.5	0.0	0.0	1.4	10.0	0.6%	1.7%
Textiles	11.6	0.0	0.5	0.3	4.0	0.0	16.4	1.0%	2.8%
Other	24.5	0.0	0.0	0.0	0.5	8.6	33.6	2.1%	5.7%
								37.2%	100.0%
Other Wastes									
Asphalt	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0%	0.0%
Concrete	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0%	0.0%
Inert Solids	0.9	0.0	0.0	0.0	25.4	0.0	26.3	1.7%	100.0%
HHW	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0%	0.0%
Fines	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0%	0.0%
Misc.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0%	0.0%
								1.7%	100.0%
Special Wastes									
Asbestos	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0%	0.0%
Bulky Items	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0%	0.0%
	299.3	254.7	189.5	267.0	300.6	279.2	1,590.3	100.0%	

----- Group C3 -----

Sample # Date City Type	25 15-Feb Downy Commercl	27 15-Feb Whitt Commercl	28 15-Feb Cerritos Commercl	29 15-Feb Norwalk Commercl	34 19-Feb Cerritos Commercl	36 19-Feb Downey Commercl	40 19-Feb Whitt Commercl	Group Total	% of Group	% of Total
Paper										
Newsprint	15.0	37.0	0	23.2	1.2	12.4	22.8	111.6	19.2%	5.9%
Corrugated	30.2	24.6	35.0	53.4	34.7	47.8	27.8	253.5	43.5%	13.3%
High Grade	13.6	0.0	3.2	0.0	0.5	21.8	15.0	54.1	9.3%	2.8%
Mixed	14.8	17.0	8.6	9.5	38.4	30.8	8.6	127.7	21.9%	6.7%
Contaminated	10.8	9.2	6.5	8.9	0.0	0.0	0.0	35.4	6.1%	1.9%
									100.0%	30.6%
Plastics										
Containers	2.9	0.9	0.0	0.0	0.0	0.0	0.0	3.8	2.7%	0.2%
PET	0.1	0.5	0.0	0.5	0.0	0.0	0.0	1.1	0.8%	0.1%
HDPE	0.7	1.8	0.1	2.4	0.0	0.0	0.0	5.0	3.6%	0.3%
Film	10.4	5.2	2.2	4.4	9.6	7.0	7.6	46.4	33.1%	2.4%
Polystyrene	9.2	1.6	5.0	3.4	0.1	1.0	1.0	21.3	15.2%	1.1%
Other	1.0	4.8	5.8	40.0	4.6	6.3	0.0	62.5	44.6%	3.3%
									100.0%	7.4%
Glass										
CA Redemption	4.5	4.0	0.4	0.5	0.6	0.0	0.0	10.0	47.6%	0.5%
Containers	1.5	4.2	0.5	3.7	0.0	0.0	0.0	9.9	47.1%	0.5%
Other	1.1	0.0	0.0	0.0	0.0	0.0	0.0	1.1	5.2%	0.1%
									100.0%	1.1%
Metals										
Al Cans	0.3	0.3	0.1	2.9	0.2	0.4	0.0	4.2	2.5%	0.2%
Tin Cans	1.1	6.6	1.4	2.2	0.2	0.0	0.0	11.5	6.9%	0.6%
Ferrous	2.7	0.0	1.0	2.9	4.6	0.1	15.8	27.1	16.3%	1.4%
Nonferrous	3.9	0.9	0.0	0.2	4.4	0.2	0.0	9.6	5.8%	0.5%
White Goods	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0%	0.0%
Mixed Metals	3.3	33.7	7.0	0.0	39.0	2.2	28.2	113.4	68.4%	6.0%
									100.0%	8.7%
Yard Waste										
Grass/Leaves	0.0	35.4	0.4	0.0	0.0	0.0	0.0	35.8	25.2%	1.9%
Prunings	23.4	0.0	0.0	16.9	0.3	0.0	65.8	106.4	74.8%	5.6%
									100.0%	7.5%
Organic										
Food	130.0	18.8	145.0	55.8	0.5	6.6	0.0	356.7	50.4%	18.7%
Wood	15.2	34.6	11.2	15.0	40.3	4.8	14.4	135.5	19.2%	7.1%
Tires	0.0	0.0	0.0	23.8	0.0	46.8	0.0	70.6	10.0%	3.7%
Manure	0.0	0.0	0.0	0.0	0.0	0.0	4.6	4.6	0.7%	0.2%
Diapers	5.5	9.2	0.0	0.3	0.0	0.0	0.4	15.4	2.2%	0.8%
Textiles	21.1	23.0	0.2	11.9	40.5	0.0	7.2	103.9	14.7%	5.5%
Other	12.9	7.8	0.0	0.0	0.0	0.0	0.0	20.7	2.9%	1.1%
									100.0%	37.2%
Other Wastes										
Asphalt	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0%	0.0%
Concrete	0.0	0.0	0.0	0.0	0.0	19.4	0.0	19.4	13.4%	1.0%
Inert Solids	0.0	0.6	0.0	81.8	32.6	0.0	10.2	125.2	86.3%	6.6%
HHW	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.3%	0.0%
Fines	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0%	0.0%
Misc.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0%	0.0%
									100.0%	7.6%
Special Wastes										
Asbestos	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0%	0.0%
Bulky Items	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0%	0.0%
	335.7	281.7	233.6	363.6	252.3	207.6	229.4	1,903.9		100.0%

Group R3

Sample # Date City Type	4 08-Feb LaMirada Multi	15 13-Feb Cerritos Single	16 13-Feb Downy Single	19 13-Feb Whitt-Cnt Single	20 13-Feb Whitt-Ct Single	21 13-Feb LaMirada Single	37 19-Feb Lkwd Single	38 19-Feb Cerritos Single	Group Total	Summary % of Category	% of Total
Paper											
Newsprint	24.5	36.3	10.6	31.0	23.8	19.6	23.6	20.8	190.2	32.8%	9.9%
Corrugated	9.0	10.4	10.4	3.2	11.4	30.4	30.8	6.4	112	19.3%	5.8%
High Grade	1.0	1.6	0.6	0.8	0.6	1.3	0.2	0.8	6.9	1.2%	0.4%
Mixed	26.5	54.7	10.4	19.6	10.2	18.6	31.6	49.6	221.2	38.1%	11.5%
Contaminated	8.0	0.0	9.6	17.8	4.0	10.4	0.0	0.0	49.8	8.6%	2.6%
									580.1	100.0%	30.1%
Plastics											
Containers	1.0	0.0	0.1	0.0	2.7	1.5	0.0	1.2	6.5	5.0%	0.3%
PET	1.0	0.2	0.1	0.0	0.5	0.3	0.2	0.0	2.3	1.8%	0.1%
HDPE	2.0	2.4	1.9	1.0	1.8	1.5	1.6	0.8	13	9.9%	0.7%
Film	6.5	6.7	7.2	5.8	6.2	9.5	4.6	5.8	52.3	39.9%	2.7%
Poylstyrene	1.0	2.0	0.7	1.0	3.4	1.8	2.0	2.2	14.1	10.7%	0.7%
Other	12.5	8.9	2.4	3.8	1.2	2.6	7.2	4.4	43	32.8%	2.2%
									131.2	100.0%	6.8%
Glass											
CA Redemption	3.5	3.5	4.3	2.7	1.6	5.6	0.0	1.2	22.4	27.0%	1.2%
Containers	12.0	1.9	4.6	16.2	6.9	3.7	8.0	4.4	57.7	69.6%	3.0%
Other	2.0	0.1	0.0	0.0	0.6	0.1	0.0	0.0	2.8	3.4%	0.1%
									82.9	100.0%	4.3%
Metals											
Al Cans	1.5	0.1	0.0	0.7	1.1	2.3	0.1	0.4	6.2	6.5%	0.3%
Tin Cans	5.5	5.9	2.3	7.0	7.3	3.9	9.2	1.6	42.7	45.0%	2.2%
Ferrous	1.5	0.6	4.6	0.1	0.0	1.3	0.0	0.0	8.1	8.5%	0.4%
Nonferrous	0.5	0.1	0.7	0.0	1.3	1.3	0.2	0.1	4.2	4.4%	0.2%
White Goods	0.0	0.0	6.0	0.0	0.0	0.0	0.0	0.0	6	6.3%	0.3%
Mixed Metals	6.0	3.7	9.9	1.9	0.0	0.0	6.1	0.1	27.7	29.2%	1.4%
									94.9	100.0%	4.9%
Yard Waste											
Grass/Leaves	0.0	76.2	2.2	38.6	39.2	27.0	52.6	29.4	265.2	64.9%	13.7%
Prunings	0.0	0.0	54.8	22.6	20.8	0.0	0.0	45.0	143.2	35.1%	7.4%
									408.4	100.0%	21.2%
Organic											
Food	42.0	35.3	67.8	36.8	32.3	44.7	25.2	33.8	317.85	53.7%	16.5%
Wood	0.0	1.0	1.4	1.2	12.8	23.6	7.2	0.5	47.7	8.1%	2.5%
Tires	4.0	0.0	0.0	0.0	0.0	0.0	0.0	34.2	38.2	6.5%	2.0%
Manure	0.0	4.9	0.0	0.0	0.0	0.0	0.0	0.0	4.9	0.8%	0.3%
Diapers	13.5	16.4	6.9	4.7	3.3	14.0	17.6	8.2	84.6	14.3%	4.4%
Textiles	6.0	6.1	16.2	2.9	0.0	11.5	4.0	11.4	58.1	9.8%	3.0%
Other	0.5	6.1	0.0	8.8	5.2	9.7	10.0	0.2	40.5	6.8%	2.1%
									591.85	100.0%	30.7%
Other Wastes											
Asphalt	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0%	0.0%
Concrete	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0%	0.0%
Inert Solids	16.5	0.0	13.4	2.9	2.8	1.5	0.0	0.0	37.1	90.5%	1.9%
HHW	0.0	0.4	0.0	0.0	3.5	0.0	0.0	0.0	3.9	9.5%	0.2%
Fines	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0%	0.0%
Misc.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0%	0.0%
									41	100.0%	2.1%
Special Wastes											
Asbestos	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0%	0.0%
Bulky Items	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0%	0.0%
	208.0	285.5	249.1	231.1	204.5	247.7	242.0	262.5	3,860.7		100.0%

Group C1												
Sample #	13	14	26	30	31	35	39	41	42	Group Total	% of Group	% of Category
Date City Type	13-Feb Bell Commercl	13-Feb BellGdns Commercl	15-Feb Bellfwr Commercl	15-Feb Comptn Commercl	15-Feb Comptn Commercl	19-Feb Lynwd Commercl	19-Feb Artesia Commercl	20-Feb Maywd Commercl	20-Feb Bell Commercl			
Paper												
Newsprint	0.0	12.8	1.8	0.0	16.8	4.2	5.9	6.2	0.2	47.9	1.9%	6.2%
Corrugated	9.2	44.4	64.4	76.6	15.8	49.4	87.8	37.6	23.4	408.6	16.1%	52.6%
High Grade	32.8	0.0	3.6	3.8	22.2	0.0	0.0	15.6	0.4	78.4	3.1%	10.1%
Mixed	20.4	26.4	44.4	12.2	34.8	12.0	12.0	7.8	14.4	184.4	7.3%	23.7%
Contaminated	0.0	0.0	6.8	11.6	20.0	19.4	0.0	0.0	0.0	57.8	2.3%	7.4%
											30.7%	100.0%
Plastics												
Containers	0.0	0.0	0.0	0.0	0.7	0.0	0.0	0.0	0.0	0.7	0.0%	0.2%
PET	0.0	0.0	0.0	0.0	0.1	0.4	0.2	0.0	0.0	0.7	0.0%	0.2%
HDPE	0.0	0.7	0.4	2.0	2.4	4.9	1.2	0.6	0.5	12.7	0.5%	4.5%
Film	11.4	6.6	10.4	31.8	13.0	7.6	7.4	20.8	53.0	162.0	6.4%	57.6%
Poylstyrene	3.2	0.7	1.6	3.4	7.8	2.5	0.8	1.6	0.4	22.0	0.9%	7.8%
Other	5.1	10.3	1.7	35.2	5.4	5.4	10.6	2.2	7.4	83.3	3.3%	29.6%
											11.1%	100.0%
Glass												
CA Redemption	3.1	2.1	0.0	0.0	3.3	1.6	0.0	0.8	0.0	10.9	0.4%	16.8%
Containers	1.1	1.3	0.4	0.0	0.0	5.8	0.0	0.0	0.4	9.0	0.4%	13.9%
Other	0.0	0.0	0.0	0.0	0.0	4.8	40.0	0.0	0.0	44.8	1.8%	69.2%
											2.6%	100.0%
Metals												
Al Cans	0.3	0.3	0.0	0.5	0.0	0.2	0.0	0.4	0.0	1.7	0.1%	0.9%
Tin Cans	0.5	0.7	0.0	1.4	41.5	3.7	1.9	0.2	0.2	50.1	2.0%	27.3%
Ferrous	0.7	0.1	55.0	0.0	0.0	6.2	3.4	4.8	0.6	70.8	2.8%	38.5%
Nonferrous	0.0	0.3	0.8	1.3	0.5	0.2	0.1	0.0	0.0	3.2	0.1%	1.7%
White Goods	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0%	0.0%
Mixed Metals	2.9	0.0	0.0	40.0	11.1	3.8	0.0	0.2	0.0	58.0	2.3%	31.6%
											7.3%	100.0%
Yard Waste												
Grass/Leaves	0.0	0.0	0.0	0.0	40.8	0.0	7.0	0.0	0.0	47.8	1.9%	37.6%
Prunings	0.0	76.4	0.0	2.8	0.0	0.0	0.0	0.0	0.0	79.2	3.1%	62.4%
											5.0%	100.0%
Organic												
Food	124.8	16.9	78.8	0.0	51.0	20.2	50.6	0.0	0.0	342.3	13.5%	34.7%
Wood	10.8	7.0	15.2	43.8	4.0	32.0	49.2	35.6	113.3	310.9	12.3%	31.5%
Tires	0.0	0.0	1.7	19.6	0.0	0.4	0.0	0.5	0.0	22.2	0.9%	2.2%
Manure	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0%	0.0%
Diapers	1.5	0.0	2.9	0.0	10.6	3.8	0.0	1.0	0.0	19.8	0.8%	2.0%
Textiles	3.0	26.8	0.3	44.4	17.0	3.8	0.2	116.8	46.0	258.3	10.2%	26.2%
Other	0.0	10.3	2.5	0.0	0.0	19.1	1.4	0.0	0.0	33.3	1.3%	3.4%
											39.0%	100.0%
Other Wastes												
Asphalt	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0%	0.0%
Concrete	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0%	0.0%
Inert Solids	0.0	0.9	0.0	0.0	2.2	20.6	56.0	2.0	5.0	86.7	3.4%	78.3%
HHW	0.0	0.0	0.0	0.0	1.1	0.0	0.4	4.4	0.0	5.9	0.2%	5.3%
Fines	0.0	0.0	0.0	0.0	0.0	15.0	1.6	1.5	0.0	18.1	0.7%	16.4%
Misc.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0%	0.0%
											4.4%	100.0%
Special Wastes												
Asbestos	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0%	0.0%
Bulky Items	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0%	0.0%
	230.8	245.0	292.7	330.4	322.1	247.0	337.7	260.6	265.2	2,531.5	100.0%	

	Group R1									
Sample #	1	6	10	11	12	17	18		Summary	
Date	08-Feb	12-Feb	12-Feb	12-Feb	12-Feb	13-Feb	13-Feb		% of	% of
City	Comm.	Comm.	Bell	Maywd	Bell	HuntPk	Cudahy		Category	Total
Type	Multi	Single	Multi	Single	Multi	Single	Single	Group	Total	Total
Paper										
Newsprint	20.5	26.5	15.8	8.1	2.0	38.8	5.0	116.7	27.0%	6.2%
Corrugated	26.0	6.5	9.8	9.6	14.8	6.2	2.2	75.1	17.4%	4.0%
High Grade	1.5	1.6	2.6	0.0	0.4	0.0	0.0	6.1	1.4%	0.3%
Mixed	28.5	33.0	18.0	13.0	14.4	39.0	5.6	151.5	35.0%	8.1%
Contaminated	14.5	0.0	13.6	21.1	12.2	9.8	11.8	83.0	19.2%	4.4%
									100.0%	23.0%
Plastics										
Containers	1.0	2.1	0.3	0.0	0.0	0.0	0.0	3.4	2.4%	0.2%
PET	1.0	0.1	0.0	0.3	0.7	0.2	0.5	2.8	1.9%	0.1%
HDPE	2.0	2.0	3.4	4.7	5.0	1.2	3.5	21.8	15.1%	1.2%
Film	9.3	7.4	7.6	9.7	7.2	3.6	7.2	52.0	36.0%	2.8%
Poylstyrene	0.5	3.0	0.7	2.9	3.4	1.2	2.4	14.1	9.8%	0.8%
Other	3.3	3.7	11.5	3.2	2.0	17.4	9.4	50.5	34.9%	2.7%
									100.0%	7.7%
Glass										
CA Redemption	7.0	4.6	3.9	3.6	2.5	3.9	1.9	27.4	27.9%	1.5%
Containers	10.5	13.5	4.3	10.2	3.1	19.7	2.3	63.6	64.7%	3.4%
Other	3.5	0.0	1.7	2.1	0.0	0.0	0.0	7.3	7.4%	0.4%
									100.0%	5.2%
Metals										
Al Cans	0.5	0.1	0.3	0.1	0.3	0.7	0.1	2.1	2.0%	0.1%
Tin Cans	5.0	4.0	7.0	9.5	3.6	9.0	2.2	40.3	38.5%	2.1%
Ferrous	0.0	3.2	17.9	0.0	0.0	0.0	2.1	23.2	22.2%	1.2%
Nonferrous	0.5	0.1	4.3	0.7	0.3	0.1	0.5	6.5	6.2%	0.3%
White Goods	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0%	0.0%
Mixed Metals	7.5	0.7	10.7	1.5	2.6	9.6	0.0	32.6	31.1%	1.7%
									100.0%	5.6%
Yard Waste										
Grass/Leaves	11.5	21.2	9.4	8.6	0.0	30.6	48.6	129.9	41.5%	6.9%
Prunings	0.0	105.0	0.0	45.8	32.4	0.0	0.0	183.2	58.5%	9.8%
									100.0%	16.7%
Organic										
Food	64.5	45.4	57.3	71.3	25.0	22.0	24.8	310.3	46.6%	16.5%
Wood	10.5	9.4	20.2	0.0	18.4	2.4	29.8	90.7	13.6%	4.8%
Tires	0.0	0.0	1.3	0.0	26.1	0.0	0.0	27.4	4.1%	1.5%
Manure	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0%	0.0%
Diapers	16.5	11.0	24.8	20.6	15.0	4.1	19.0	111.0	16.7%	5.9%
Textiles	10.0	5.7	9.7	4.5	56.2	4.5	15.0	105.6	15.9%	5.6%
Other	0.0	0.0	0.0	0.0	0.0	8.2	12.2	20.4	3.1%	1.1%
									100.0%	35.4%
Other Wastes										
Asphalt	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0%	0.0%
Concrete	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0%	0.0%
Inert Solids	0.0	7.9	22.9	0.0	3.1	33.1	16.5	83.5	69.9%	4.4%
HHW	1.3	0.0	2.7	0.0	0.0	4.7	0.5	9.2	7.7%	0.5%
Fines	0.0	11.9	0.0	11.6	3.3	0.0	0.0	26.8	22.4%	1.4%
Misc.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0%	0.0%
									100.0%	6.4%
Special Wastes										
Asbestos	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0%	0.0%
Bulky Items	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0%	0.0%
	256.8	329.6	281.7	262.7	254.0	270.0	223.1	1,877.9		100.0%

----- Group R2 -----								
Sample #	2	3	5	7	22	----- Summary -----		
Date	08-Feb	08-Feb	12-Feb	12-Feb	13-Feb	Group	% of	% of
City	Pico	Paramnt	Pico	Paramnt	Artesia			
Type	Multi	Multi	Single	Single	Single	Total	Category	Total

Paper								
Newsprint	14.5	50.0	18.5	13.0	16.4	112.4	26.1%	7.1%
Corrugated	9.0	11.5	17.0	6.8	31.6	75.9	17.6%	4.8%
High Grade	1.0	2.5	3.0	1.8	3.0	11.3	2.6%	0.7%
Mixed	22.0	45.0	72.0	29.6	11.2	179.8	41.7%	11.4%
Contaminated	7.5	8.5	0.0	11.8	24.0	51.8	12.0%	3.3%
						431.2	100.0%	27.3%
Plastics								
Containers	0.5	1.5	0.1	0.0	0.4	2.5	2.6%	0.2%
PET	1.5	0.5	0.1	1.7	1.5	5.3	5.5%	0.3%
HDPE	2.5	1.5	2.0	2.0	1.4	9.4	9.7%	0.6%
Film	8.0	8.0	9.5	5.4	9.9	40.8	42.0%	2.6%
Poylstyrene	1.5	1.0	3.0	0.9	1.6	8	8.2%	0.5%
Other	4.3	13.5	7.0	5.6	0.8	31.2	32.1%	2.0%
						97.2	100.0%	6.2%
Glass								
CA Redemption	5.0	3.5	7.5	12.9	5.5	34.4	34.0%	2.2%
Containers	9.5	18.0	7.5	21.0	5.2	61.2	60.5%	3.9%
Other	0.5	0.0	5.0	0.0	0.0	5.5	5.4%	0.3%
						101.1	100.0%	6.4%
Metals								
Al Cans	0.1	1.5	0.1	0.5	0.0	2.2	4.3%	0.1%
Tin Cans	4.0	7.0	7.0	4.9	3.1	26	50.8%	1.6%
Ferrous	1.5	2.5	0.0	0.0	0.3	4.3	8.4%	0.3%
Nonferrous	1.0	2.0	1.0	1.7	0.0	5.7	11.1%	0.4%
White Goods	0.0	0.0	0.0	0.0	0.0	0	0.0%	0.0%
Mixed Metals	0.0	0.0	0.5	0.9	11.6	13	25.4%	0.8%
						51.2	100.0%	3.2%
Yard Waste								
Grass/Leaves	1.0	0.0	180.0	0.0	28.8	209.8	59.7%	13.3%
Prunings	0.0	0.0	0.0	102.8	38.8	141.6	40.3%	9.0%
						351.4	100.0%	22.2%
Organic								
Food	58.5	23.0	36.5	112.1	17.3	247.4	58.3%	15.7%
Wood	1.0	5.0	5.5	3.4	17.2	32.1	7.6%	2.0%
Tires	0.0	3.0	0.0	1.7	0.0	4.7	1.1%	0.3%
Manure	0.0	0.0	0.0	0.0	0.0	0	0.0%	0.0%
Diapers	7.5	15.0	9.0	21.7	11.1	64.3	15.2%	4.1%
Textiles	2.0	21.0	0.0	6.4	36.9	66.3	15.6%	4.2%
Other	0.0	0.0	4.5	0.7	4.0	9.2	2.2%	0.6%
						424.0	100.0%	26.8%
Other Wastes								
Asphalt	0.0	0.0	0.0	0.0	0.0	0	0.0%	0.0%
Concrete	0.0	0.0	0.0	5.3	29.2	34.5	27.9%	2.2%
Inert Solids	70.0	0.0	0.0	7.0	9.4	86.4	70.0%	5.5%
HHW	0.0	1.5	0.0	0.0	0.1	1.6	1.3%	0.1%
Fines	1.0	0.0	0.0	0.0	0.0	1	0.8%	0.1%
Misc.	0.0	0.0	0.0	0.0	0.0	0	0.0%	0.0%
						123.5	100.0%	7.8%
Special Wastes								
Asbestos	0.0	0.0	0.0	0.0	0.0	0	0.0%	0.0%
Bulky Items	0.0	0.0	0.0	0.0	0.0	0	0.0%	0.0%
	234.9	246.5	396.3	381.6	320.3	3,159.2		100.0%

APPENDIX B-7

EXISTING COMPARABLE DATA

CITY OF GLENDALE

TABLE 2-12

COMPOSITION OF COMMERCIAL WASTE DISPOSED

Commercial Routes Data Summary/Statistical Analysis (all values % by weight)						
	Min	Max		Std	90% Confidence	
	Value	Value	Mean	Dev	Interval	
	-----	-----	-----	-----	Lower	Upper

PAPER						
Newsprint	0.0	26.5	8.3	5.4	6.0	10.5
Corrugated Containers	2.2	28.7	9.9	5.5	7.5	12.2
High-grade	0.0	20.6	2.3	5.6	0.0	4.7
Mixed	5.0	70.3	24.1	14.5	18.0	30.2
PLASTICS						
Containers	0.3	13.8	2.0	3.2	0.7	3.4
PET	0.0	0.8	0.3	0.2	0.2	0.4
Other	1.3	19.3	6.8	4.1	5.1	8.5
GLASS						
Ca. Redemption Value	0.0	6.4	1.8	1.9	1.1	2.6
Containers	0.0	4.5	1.8	1.7	1.1	2.5
Other	0.0	25.7	2.7	6.9	0.0	5.6
METALS						
Aluminum Cans	0.0	1.4	0.4	0.4	0.2	0.6
Tin cans	0.0	6.6	1.4	1.5	0.8	2.1
Ferrous	0.0	11.5	2.0	3.9	0.3	3.6
Nonferrous	0.0	5.8	1.2	1.9	0.4	2.0
White Goods	0.0	0.0	0.0	0.0	0.0	0.0
YARD WASTE						
Grass/leaves	0.0	9.3	2.7	3.2	1.3	4.0
Prunings	0.0	2.5	0.3	0.8	0.0	0.7
NON-PAPER ORGANICS						
Food	0.0	61.1	11.9	15.9	5.2	18.7
Wood	0.0	18.4	3.1	5.2	0.9	5.3
Tires and Rubber Products	0.0	15.4	1.4	4.1	0.0	3.2
Manure	0.0	0.0	0.0	0.0	0.0	0.0
Disposable Diapers	0.0	8.9	2.2	2.5	1.2	3.3
Other	0.0	57.6	8.0	15.0	1.7	14.4
OTHER WASTES						
Asphalt	0.0	0.0	0.0	0.0	0.0	0.0
Concrete	0.0	5.1	0.3	1.3	0.0	0.8
Other Inert Solids	0.0	11.2	1.6	3.3	0.2	3.0
Household Haz. Wst. Containers	0.0	4.7	0.7	1.4	0.1	1.3
Household Haz. Wst.	0.0	13.5	1.2	3.3	0.0	2.6
Fines	0.0	4.9	1.6	1.7	0.9	2.3
SPECIAL WASTES						
Asbestos	0.0	0.0	0.0	0.0	0.0	0.0
Bulky Items	0.0	0.0	0.0	0.0	0.0	0.0
Other	0.0	0.0	0.0	0.0	0.0	0.0

100						

18 samples analyzed						

CITY OF AZUSA INDUSTRIAL WASTE COMPOSITION

Average Composition			Std. Deviation		90% Confidence Interval	
	(%)		(%)		(%)	
PAPER						
Corrugated Containers	23.0%		21.9%		6.1%	
Mixed Paper	8.0%		8.6%		2.4%	
Newspaper	1.0%		2.1%		0.6%	
Ledger	1.6%		3.7%		1.1%	
Other Paper	5.9%	39.5%	4.7%	22.5%	1.3%	6.3%
PLASTIC						
Containers	3.0%		5.0%		1.4%	
PET containers	0.1%		0.3%		0.1%	
HDPE containers	0.5%		1.0%		0.3%	
Film plastics	2.5%		3.6%		1.0%	
Polystyrene	0.5%		1.0%		0.3%	
Other plastics	3.1%	9.7%	6.6%	9.2%	1.9%	2.6%
GLASS						
Refillable glass	0.0%		0.0%		0.0%	
CA redemption glass	2.3%		3.2%		0.9%	
Other recyclable glass	1.1%		1.8%		0.5%	
Other non-recyclable glass	0.2%	3.6%	0.7%	3.8%	0.2%	1.1%
METALS						
Aluminum cans	0.2%		0.6%		0.2%	
Tin cans	0.5%		1.9%		0.5%	
Ferrous metals	6.4%		8.9%		2.5%	
Non-ferrous metals	1.3%		5.5%		1.6%	
White goods	0.0%		0.0%		0.0%	
Other metals	0.5%	8.9%	1.8%	12.9%	0.5%	3.6%
YARD WASTE						
Grass/leaves	0.3%		1.6%		0.4%	
Prunings	0.9%	1.2%	3.7%	4.6%	1.0%	1.3%
ORGANICS						
Food waste	0.3%		0.7%		0.2%	
Wood waste	19.9%		21.9%		6.2%	
Tires and rubber	4.8%		11.2%		3.2%	
Textiles and leather	1.7%		3.6%		1.0%	
Other organics	0.6%	27.3%	2.7%	21.5%	0.8%	6.1%
OTHER WASTES						
Inert solids	5.9%		11.2%		3.2%	
Miscellaneous	0.8%	6.7%	2.9%	11.3%	0.8%	3.2%
SPECIAL WASTE						
Ash	1.7%		5.9%		1.7%	
Industrial sludge	0.4%		2.4%		0.7%	
Asbestos	0.2%		1.3%		0.4%	
Auto shredder	0.0%		0.0%		0.0%	
Other special waste	0.9%	3.2%	0.0%	7.4%	1.0%	2.1%
Hazardous waste	0.4%		1.1%		0.3%	
Total Waste	100.5%					

CITY OF GLENDALE

TABLE 2-11

COMPOSITION OF RESIDENTIAL WASTE DISPOSED

Residential Routes Data Summary/Statistical Analysis (all values % by weight)						
	Min	Max		Std	90% Confidence Interval	
	Value	Value	Mean	Dev	Lower	Upper

PAPER						
Newsprint	1.0	29.3	11.3	6.8	9.5	14.2
Corrugated Containers	0.0	14.6	5.2	3.9	3.9	6.5
High-grade	0.0	4.5	0.4	1.0	0.0	0.7
Mixed	6.5	41.5	21.8	8.9	18.7	24.8
PLASTICS						
Containers	0.2	6.3	1.7	1.5	1.2	2.2
PET	0.0	5.0	0.7	1.0	0.4	1.0
Other	2.1	28.3	7.7	5.4	5.8	9.5
GLASS						
Ca. Redemption Value	0.0	6.8	2.4	1.3	1.8	3.0
Containers	0.0	10.8	2.7	3.1	1.6	3.7
Other	0.0	4.2	0.5	1.2	0.1	0.9
METALS						
Aluminum Cans	0.0	4.7	0.9	1.2	0.4	1.3
Tin cans	0.0	6.1	1.9	1.5	1.4	2.4
Ferrous	0.0	19.1	2.4	4.6	0.8	4.0
Nonferrous	0.0	1.6	0.4	0.5	0.2	0.5
White Goods	0.0	23.1	1.5	5.2	0.0	3.3
YARD WASTE						
Grass/leaves	0.0	72.7	16.3	19.8	9.6	23.1
Prunings	0.0	12.2	1.1	2.6	0.2	2.0
NON-PAPER ORGANICS						
Food	0.0	21.2	8.2	5.8	6.2	10.2
Wood	0.0	18.1	1.9	4.4	0.4	3.4
Tires and Rubber Products	0.0	7.5	0.6	1.9	0.0	1.3
Manure	0.0	0.0	0.0	0.0	0.0	0.0
Disposable Diapers	0.0	12.6	3.6	2.8	2.6	4.5
Other	0.0	12.6	2.7	3.1	1.6	3.8
OTHER WASTES						
Asphalt	0.0	0.0	0.0	0.0	0.0	0.0
Concrete	0.0	1.9	0.1	0.4	0.0	0.2
Other Inert Solids	0.0	8.6	0.5	1.7	0.0	1.1
Household Haz. Wst. Containers	0.0	3.9	0.9	1.3	0.4	1.4
Household Haz. Wst.	0.0	2.3	0.3	0.6	0.1	0.5
Fines	0.0	7.1	1.9	1.5	1.4	2.4
SPECIAL WASTES						
Asbestos	0.0	0.0	0.0	0.0	0.0	0.0
Bulky Items	0.0	0.0	0.0	0.0	0.0	0.0
Other	0.0	1.3	0.1	0.3	0.0	0.1

100						

25 samples analyzed						

EXISTING DATA - SANTA FE SPRINGS

TABLE 6. SINGLE-FAMILY RESIDENTIAL ROUTES:
DATA SUMMARY/STATISTICAL ANALYSIS
(All Values % by Weight)

			90% Confidence Interval					
			Min	Max		Std	-----	
			Value	Value	Mean	Dev	Lower	Upper
			-----	-----	-----	-----	-----	-----
PAPER	Total	30.3						
Newsprint			0.0	15.2	4.9	3.9	2.8	7.0
Corrugated Containers			0.0	18.4	5.2	5.1	2.4	7.9
High-grade			0.0	4.4	1.0	1.4	0.3	1.8
Mixed			3.4	18.7	11.9	5.0	9.2	14.5
Contaminated			2.1	17.8	7.3	4.3	5.0	9.6
PLASTICS	Total	10.4						
Containers			0.0	5.0	1.3	1.5	0.5	2.1
PET			0.0	2.6	0.8	0.8	0.4	1.2
HDPE			0.3	3.1	1.3	0.8	0.9	1.7
Film			0.0	12.3	3.2	3.1	1.5	4.9
Polystyrene			0.2	1.9	0.7	0.4	0.4	0.9
Other			0.6	9.8	3.1	2.6	1.7	4.5
GLASS	Total	5.5						
Ca. Redemption Value			1.0	6.9	2.6	1.8	1.7	3.6
Containers			0.0	6.3	2.9	1.7	2.0	3.8
Other			0.0	0.3	0.0	0.1	0.0	0.1
METALS	Total	4.4						
Aluminum Cans			0.0	1.0	0.4	0.3	0.3	0.6
Tin cans			1.0	4.4	2.1	0.9	1.6	2.6
Ferrous			0.0	3.8	0.9	1.1	0.3	1.5
Nonferrous			0.0	3.5	0.7	1.0	0.2	1.2
White Goods			0.0	0.0	0.0	0.0	0.0	0.0
Mixed metals			0.0	2.3	0.2	0.7	0.0	0.6
YARD WASTE	Total	20.8						
Grass/leaves			0.0	33.6	17.5	10.2	12.0	23.0
Prunings			0.0	21.0	3.3	5.9	0.1	6.5
NON-PAPER ORG	Total	23.3						
Food			3.7	17.9	10.3	5.0	7.6	13.0
Wood			0.0	4.1	1.0	1.4	0.3	1.8
Tires and Rubber			0.0	7.1	0.8	2.0	0.0	1.9
Manure			0.0	0.0	0.0	0.0	0.0	0.0
Disposable Diapers			0.6	10.2	3.7	3.0	2.1	5.3
Textiles			0.5	7.4	2.7	2.4	1.4	4.0
Other			0.0	10.5	4.8	2.7	3.4	6.2
OTHER WASTES	Total	5.3						
Asphalt			0.0	0.0	0.0	0.0	0.0	0.0
Concrete			0.0	0.0	0.0	0.0	0.0	0.0
Other Inert Solids			0.0	6.0	1.4	2.2	0.2	2.6
Household Haz. Wst.			0.0	4.4	0.8	1.6	0.0	1.6
Fines			0.0	3.7	1.6	1.4	0.9	2.4
Misc.			0.0	6.1	1.5	2.2	0.3	2.7
SPECIAL WASTES	Total	0.0						
Asbestos			0.0	0.0	0.0	0.0	0.0	0.0
Bulky Items			0.0	0.0	0.0	0.0	0.0	0.0

					100.0			

11 samples analyzed

EXISTING DATA - SANTA FE SPRINGS

TABLE 7. COMMERCIAL ROUTES:
DATA SUMMARY/STATISTICAL ANALYSIS
(All Values % by Weight)

			90% Confidence Interval					
			Min	Max		Std	-----	
			Value	Value	Mean	Dev	Lower	Upper
			-----	-----	-----	-----	-----	-----
PAPER	Total	36.5						
Newsprint			0.0	7.1	2.0	2.2	1.3	2.6
Corrugated Containers			0.0	58.0	12.2	11.8	8.7	15.8
High-grade			0.0	20.1	3.0	4.3	1.7	4.3
Mixed			0.0	50.2	12.9	11.1	9.6	16.2
Contaminated			0.0	44.6	6.4	8.7	3.8	9.0
PLASTICS	Total	15.3						
Containers			0.0	5.5	0.9	1.4	0.5	1.3
PET			0.0	1.0	0.1	0.2	0.0	0.2
HDPE			0.0	2.3	0.2	0.4	0.0	0.3
Film			0.0	32.7	5.5	6.3	3.6	7.4
Polystyrene			0.0	5.2	0.7	1.0	0.4	1.0
Other			0.0	34.3	8.0	9.7	5.1	10.9
GLASS	Total	2.7						
Ca. Redemption Value			0.0	4.1	1.1	1.2	0.8	1.5
Containers			0.0	7.7	0.7	1.9	0.1	1.2
Other			0.0	16.0	0.9	3.2	-0.1	1.9
METALS	Total	9.9						
Aluminum Cans			0.0	0.7	0.2	0.2	0.1	0.2
Tin cans			0.0	4.0	0.8	1.0	0.5	1.1
Ferrous			0.0	49.5	6.3	9.9	3.4	9.3
Nonferrous			0.0	9.9	1.5	2.3	0.8	2.2
White Goods			0.0	14.1	0.5	2.5	-0.3	1.2
Mixed metals			0.0	5.8	0.6	1.7	0.1	1.1
YARD WASTE	Total	3.8						
Grass/leaves			0.0	40.9	3.7	8.3	1.2	6.2
Prunings			0.0	2.8	0.1	0.5	-0.1	0.2
NON-PAPER ORG	Total	28.3						
Food			0.0	24.3	4.3	5.8	2.6	6.1
Wood			0.0	58.3	15.9	15.4	11.3	20.6
Tires and Rubber			0.0	17.0	1.7	4.2	0.5	3.0
Manure			0.0	0.0	0.0	0.0	0.0	0.0
Disposable Diapers			0.0	3.8	0.3	0.9	0.1	0.6
Textiles			0.0	45.0	3.6	8.8	1.0	6.3
Other			0.0	26.4	2.4	6.3	0.5	4.3
OTHER WASTES	Total	3.5						
Asphalt			0.0	0.0	0.0	0.0	0.0	0.0
Concrete			0.0	1.8	0.1	0.4	0.0	0.2
Other Inert Solids			0.0	3.7	0.2	0.7	0.0	0.4
Household Haz. Wst.			0.0	8.6	0.8	2.0	0.2	1.4
Fines			0.0	3.8	0.7	1.0	0.4	1.0
Misc.			0.0	23.5	1.7	4.4	0.4	3.0
SPECIAL WASTES	Total	0.0						
Asbestos			0.0	0.0	0.0	0.0	0.0	0.0
Bulky Items			0.0	0.0	0.0	0.0	0.0	0.0

			100.0					

30 samples analyzed

SCS ENGINEERS

APPENDIX B-8

ANALYSIS OF VARIANCE FORMULAS

ANALYSIS OF VARAINCE (ANOVA) FORMULAS AND METHODS OF CALCULATION

Primary Assumption: $\mu_1 = \mu_2$,

where μ_1 is the mean percent by weight of a certain type of waste from one of the working group cities

and μ_2 is the mean percent by weight of a certain type of waste from a comparable city

Estimation of the Common Population Variance Based on Between-Means Variability:

$$v_B = \frac{\sum_j n_j(a_j - b)^2}{k - 1}$$

v_B = estimate of population variance

n = sample size to compute sample mean

a_j = mean of sample from the working group cities and the comparable city

b_j = weighted mean of the samples from the working group data and the comparable city data

k = number of populations being compared

Estimation of the population variance based on the with-in means variability:

$$v_w = \frac{\sum_j (n_j - 1) v_j}{\sum_j n_j - k}$$

v_w = estimate of common population variance

n_j = number of samples from each population

v_j = sample variance

k = number of population being compared

Variance Ratio to test if $\mu_1 = \mu_2$: v_B/v_w

Degrees of Freedom to obtain F value:

numerator degrees of freedom: $k - 1$

denominator degrees of freedom: $\sum_j n_j - k$

Source: Anderson, David R, et. al., 1981, *Introduction to Statistics: An Applications Approach*.
St. Paul: West Publishing Company.

APPENDIX B-9

PUENTE HILLS RECYCLE, SURVEY RESULTS
UNITED PACIFIC CORPORATION, SURVEY RESULTS

PUENTE HILLS RECYCLING CENTER

Survey -- 2 week period*

<u>South East Area Cities</u>	<u># of Cusotmers</u>
Bellflower	03
Cerritos	06
Downey	04
Hawaiian Gardens	03
La Mirada	06
Norwalk	10
Pico Rivera	07
Santa Fe Springs	10
Whittier	108

* Start date December 27, 1990

UNITED PACIFIC CORPORATION

Survey -- 2 week period*

<u>City</u>	<u>Tons</u>
Anaheim	14.58
Artesia	21.48
Bellflower	38.57
Brea	38.50
Buena Park	19.46
Burbank	22.46
Cerritos	1.93
Chino	8.64
Commerce	4.97
Cypress	33.95
Culver City	152.65
Downey	34.53
Fullerton	37.89
Garden Grove	38.17
Hacienda Heights	5.68
Huntington Beach	32.82
Huntington Park	4.47
La Habra	35.31
La Mirada	43.64
Lakewood	29.99
Long Beach	166.61
Los Alamitos	12.57
Los Angeles	84.29
Lynwood	11.24
Manhattan Beach	4.15
Norwalk	92.30
Orange	32.34
Palos Verdes	20.81
Pacific Palisades	14.39
Pico Rivera	8.25
Placentia	39.77
Rancho Cucamonga	39.28
Redondo Beach	11.
San Pedro	6.5
Santa Fe Springs	29.79
Seal Beach	7.15
Stanton	16.71
Torrance	11.92
Westminster	14.99
Whittier	351.39
Yorba Linda	17.66

*February 4-9, February 25-March2.

APPENDIX B-10

HOUSEHOLD SOURCE REDUCTION AND RECYCLING SURVEY FORMS

c) How much yard waste do you produce in an average week?

1. _____ # trash cans
2. _____ # plastic yard bags

d) Do you compost or recycle the majority of your yard wastes (leaves, grass clippings, branches, brush, weeds, etc...)?

_____ Yes _____ No, or, do you

_____ Collect and put them out with garbage.

_____ Pay a yard service to collect them.

_____ Composted someplace else

_____ Other _____

If yes, how much yard waste do you compost or recycle per month? _____ (lbs./month or volume/month)

4. In the past 12 months, has a major appliance such as a refrigerator, stove, stereo, or TV broken down?

_____ No _____ Yes, if so, what appliance was it, and how old was it?

Type of Appliance _____

Age of Appliance _____

_____ years

_____ years

_____ years

(b) Did you _____ repair it

_____ sell it

_____ donate it to, _____

_____ put it in the trash.

_____ have the appliance company haul it away.

5. a) Over the past 12 months, have you had a garage or yard sale?

_____ Yes _____ No

b) If you had not sold these items, would you have thrown them away?

_____ Yes _____ No

SOUTHEAST AREA CITIES
HOUSEHOLD SOURCE REDUCTION AND RECYCLING SURVEY

Phone Number: _____

City: _____

	<u>Date</u>	<u>Time</u>	<u>Result</u>
1st Attempt	___/___	_____ AM/PM	_____
2nd Attempt	___/___	_____ AM/PM	_____
3rd Attempt	___/___	_____ AM/PM	_____

Hello, my name is _____, I work for Clements Engineers. We have been hired by your city to conduct a survey of residents regarding recycling activities. I would like to ask you a few questions, it should only take a few minutes. Is this a good time to call?

_____ Yes _____ No, call back _____

A. Source Reduction

1. How many people live in your household? _____ (#)

2. Do you live in a single family house?

_____ Yes _____ No, Do you live in a

_____ Town house

_____ Duplex

_____ Triplex

_____ Fourplex

_____ Apartment

3. a) Do you have a yard or garden space which you maintain?

_____ No _____ Yes

b) Is the majority of your yard space:

_____ Lawn

_____ Flowers

_____ Shrubs and Trees

_____ Vegetable Garden

_____ Ground Cover or Ivy

c) How much yard waste do you produce in an average week?

1. _____ # trash cans
2. _____ # plastic yard bags

d) Do you compost or recycle the majority of your yard wastes (leaves, grass clippings, branches, brush, weeds, etc...)?

_____ Yes _____ No, or, do you

- _____ Collect and put them out with garbage.
- _____ Pay a yard service to collect them.
- _____ Composted someplace else
- _____ Other _____

If yes, how much yard waste do you compost or recycle per month? _____ (lbs./month or volume/month)

4. In the past 12 months, has a major appliance such as a refrigerator, stove, stereo, or TV broken down?

_____ No _____ Yes, if so, what appliance was it, and how old was it?

<u>Type of Appliance</u>	<u>Age of Appliance</u>
_____	_____ years
_____	_____ years
_____	_____ years

(b) Did you _____ repair it
_____ sell it
_____ donate it to, _____
_____ put it in the trash.
_____ have the appliance company haul it away.

5. a) Over the past 12 months, have you had a garage or yard sale?

_____ Yes _____ No

b) If you had not sold these items, would you have thrown them away?

_____ Yes _____ No

- c) For those items you would have thrown away, what types of items were they, and what was the approximate number of items and their approximate weight?

<u>Item</u>	<u># of Items</u>	<u>Weight</u>
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

6. In the past 12 months, have you donated any clothes, furnishings, appliances or other goods to a charitable organization that you would otherwise have throw away?

____ Yes ____ No

If yes, what organization? _____

<u>Item</u>	<u># of Items</u>	<u>Weight</u>
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

7. a) Do you have any children in the household that are still in diapers?

____ No ____ Yes

If Yes:

b) How many? _____

c) Do you use disposable diapers or cloth
diapers?

_____ Disposable

_____ Cloth

d) If cloth, do you use a diaper service, or
do you wash them at home?

_____ Diaper Service

_____ Wash at home

e) What is the name of the diaper service you
use? _____

f) How many diapers do you use a day? _____

8. Do you bring your own shopping bags when you go to the grocery
or department store?

_____ Yes _____ No

If yes,

a) How many bags do you normally bring? _____

b) What type of bags did you use before you started bringing
your own, paper or plastic?

_____ Plastic _____ Paper _____ Both

c) How often do you bring your own bags to the store?

d) Do you bring canvas bags or used paper or plastic bags?

_____ Canvas _____ Paper _____ Plastic _____ Both

B. Recycling

1. a) Do you recycle your bottles, cans, jars, newspapers and
other household trash items?

_____ No _____ Yes

If Yes:

b) How many? _____

c) Do you use disposable diapers or cloth
diapers?

_____ Disposable
_____ Cloth

d) If cloth, do you use a diaper service, or
do you wash them at home?

_____ Diaper Service
_____ Wash at home

e) What is the name of the diaper service you
use? _____

f) How many diapers do you use a day? _____

8. Do you bring your own shopping bags when you go to the grocery
or department store?

_____ Yes _____ No

If yes,

a) How many bags do you normally bring? _____

b) What type of bags did you use before you started bringing
your own, paper or plastic?

_____ Plastic _____ Paper _____ Both

c) How often do you bring your own bags to the store?

d) Do you bring canvas bags or used paper or plastic bags?

_____ Canvas _____ Paper _____ Plastic _____ Both

B. Recycling

1. a) Do you recycle your bottles, cans, jars, newspapers and
other household trash items?

_____ No _____ Yes

If Yes: a) Do you participate in a City curbside program?

_____ No _____ Yes

b) Or, do you take materials to a recycling center yourself?

_____ No _____ Yes

c) Other _____

2. If you take your materials to a recycling center, which one do you take it to? _____

a) Why do you take it there? _____

3. What materials do you recycle, and how much of each of these materials do you recycle per week?

_____ Aluminum (cans per week): _____

_____ Glass Bottles (# per week): _____

_____ Plastic containers (# per week); _____

_____ Newspaper (# of feet stacked per week): _____

_____ Other _____

_____ Other _____

C. Self Haul

1. a) Do you ever haul your own trash to the landfill or transfer station?

_____ No _____ Yes

b) How often? _____

c) How much? _____

Thank you for your time and for participating in our survey!

APPENDIX B-11

HOUSEHOLD SURVEY STATISTICAL CALCULATIONS

Household Source Reduction Survey Statistical Calculations

Backyard Composting

31 positive responses/271 surveys = 11.4% average value

Standard Deviation with a 90% confidence interval:

$$\text{std. dev.} = \sqrt{\frac{(0.114)(1-0.114)}{271}} = 0.0193$$

$$\begin{aligned}\text{Confidence Interval} &= 11.4\% \pm 1.645 (0.0193) \\ &11.4\% \pm 0.03, \text{ or } 3\%\end{aligned}$$

$$\text{Relative Precision} = \frac{(1.645)(0.0193)}{(0.114)(\sqrt{271})} = 0.0168$$

Appliance Repair

8 positive responses/271 surveys = 2.9% average value

Standard Deviation with a 90% confidence interval:

$$\text{std. dev.} = \sqrt{\frac{(0.029)(1-0.029)}{271}} = 0.01$$

$$\begin{aligned}\text{Confidence Interval} &= 2.9\% \pm 1.645 (0.01) \\ &= 2.9\% \pm 0.016 \text{ or } 1.6\%\end{aligned}$$

$$\text{Relative Precision} = \frac{(1.645)(0.01)}{(0.029)(\sqrt{271})} = 0.034$$

Household Item Donation

183 positive responses/271 surveys = 67.5% average value

Standard Deviation with a 90% confidence interval:

$$\text{std. dev.} = \sqrt{\frac{(0.675)(1-0.675)}{271}} = 0.0008$$

$$\begin{aligned}\text{Confidence Interval} &= 67.5\% \pm 1.645 (0.0008) \\ &= 67.5\% \pm 0.001, \text{ or } .1\%\end{aligned}$$

$$\text{Relative Precision} = \frac{(1.645)(0.0008)}{(0.675)(\sqrt{271})} = 0.0001$$

APPENDIX B-12

CERTIFIED REDEMPTION CENTERS/COMMERCIAL RECYCLERS

**A List of Survey Respondents:
Certified Redemption Centers and Commercial Recyclers**

City of Commerce

Lu-Mar Industrial Metals Company
Atlas Iron and Metal
California Metals Recycling
Bestway Recycling
Ordonez Metals
Martinez Recycling
Cal-West By-Products

APPENDIX C

DESCRIPTION OF PROGRAM ALTERNATIVES

APPENDIX C

This appendix includes descriptions of the 17 evaluated source reduction alternatives.

Local Waste Disposal Fee Modifications

The tipping fee at landfills and waste-to-energy facilities can be raised to reflect the true cost of disposal. Differential rates can be set for recyclables and nonrecyclables. Assuming that the economic mechanisms are in place, local waste disposal fee modifications cause generators to internalize the true costs of disposal.

Key design variables:

- Increased disposal fees can be enforced at the tipping gate or through a sales tax.
- Size of the increase of the fee.

Implementation and management implications:

- High disposal fees at one isolated disposal facility may lead to diversion of waste to a cheaper facility or illegal dumping.
- Increases in the disposal rate provide an incentive to both recycling and source reduction. This alternative can be coupled with differential disposal rates, explained in the recycling component.
- Deciding the size of the fee increase can be challenging for political as well as theoretical reasons - estimating the true cost of disposal is still an imprecise science.
- The effect of raising the disposal fee on waste generators will be cushioned by the greater cost of providing collection service. For example, if disposal costs only account for 30% of the cost of collection service, increasing the disposal rate by 50% will only lead to a 15% increase in the cost of service to the generator. This assumes that the haulers will neither absorb or profit from the additional disposal cost.

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Quantity-based Local User Fees

Quantity-based local user fees are a rate structure in which generators pay for garbage collection according to the quantity they set out. The fee structure provides a direct incentive for every generator to reduce the amount of waste disposed, through source reduction, recycling, and composting. In such situations, program performance (public participation) becomes cost-driven rather than convenience-driven.

Key design variables:

- Variable can rates can be applied to some or all of the types of waste generators (single family, multifamily, commercial, etc.).
- The variable rate can be weight- or volume-based.
- Containers can be provided by the city, the hauler, or purchased by the generator. For example, the city might provide 30-gallon buckets or sell specially marked garbage bags. In both cases, only garbage in approved containers (buckets, bags) will be collected.
- The level of service provided can be set by subscription or allowed to vary from week to week.
- The differential and absolute quantity of the rate. A variable rate structure can be linear (two containers cost twice as much as one), exponential (two containers cost more than twice as much as one), or some combination of flat, linear, and exponential.

Implementation and management implications:

- Generators must see their cost of service directly, rather than the cost being hidden in the general tax. If generators can set out different quantities of garbage on different weeks, haulers must have some method of monitoring these quantities and billing accordingly.
- Some sectors will be more responsive to variable can rates than others (multifamily, for example).
- Because the per-unit cost of collecting additional containers decreases for haulers, a poorly designed variable rate structure can lead to dramatically increased profits for haulers.
- Capitalizing a volume- or weight-based system may be expensive.
- Weight-based systems are relatively untested.
- Volume-based rates may lead to overstuffing of containers or littering.

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- The potential for inequity between small and large generators exists.
- Variable can rates can subsidize recycling.

Loans, grants and loan guarantees

A jurisdiction can help generators with grants, loans, and loan guarantees for equipment and other capital expenditures that will allow them to start source reduction projects.

Key design variables:

- collateral requirements
- matching funds
- conditions of eligibility
- availability of funds
- kinds of materials to be reduced
- amount and effect on the wastestream
- level of need

Implementation and management implications:

- interest rates, degree of risk for business and municipality
- institutional or policy requirements
- willingness of company to publicly make available information gained as a result of source reduction efforts
- staff person(s) to oversee program
- budgets and competing priorities
- fiscal or financial effects of loans, grants and loan guarantees

Deposits, refunds and rebates

Deposits have been used successfully as a means of increasing the percent of plastic and aluminium soda bottles recycled. With a rebate, the manufacturer gives the customer money back, and with a refund, the retailer gives the customer money back.

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Key design variables:

- choose deposit, refund, or rebate
- method for determining how much
- disposition of unclaimed deposits
- choice of item that will have deposit, rebate, or refund
- implementation by government, retailer or manufacturer

Implementation and management implications:

- disposition of unclaimed deposits
- cross-municipal purchasers and redeemers make local implementation difficult
- fraud prevention

Business license fees

Businesses that implement source reduction programs may qualify for reduced business license fees. Conversely, those business that do not develop source reduction programs may be fined.

Key design variables:

- conditions of eligibility
- methodology used for percent of license fee reduction or fine
- format: flat rate or percent
- require a business to submit source reduction plans as a condition of having a business license or to avoid fines.

Implementation and management implications:

- difficulty measuring source reduction impact
- possible loss of revenue may cause resistance to program
- not effective if business fees are minimal or nonexistent
- equity between small and large businesses

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Local Taxes, Fees, and Fines

Tax incentives and disincentives, fees, and fines can be applied to encourage or discourage a wide range of desired or undesired products and services. One significant tax, the advanced disposal fee, is detailed in a separate section. Fines do not stand on their own as an independent alternative, as they are a method of enforcing regulatory programs. They are included here because, like taxes and fees, they create economic incentives to reduce waste and provide a source of funding for the jurisdiction.

Key design variables:

- Taxes and fees can target consumers, retailers, manufacturers, or haulers.
- The item to be taxed can include services (garbage disposal), specific products (disposable diapers), packaging (nonrefillable beverage containers), inputs to production (virgin newsprint), or equipment (copy machines without the duplex capacity).
- Changes in the tax structure can result in a net decrease or increase of tax revenue, depending on the emphasis on incentives (tax exemptions) or disincentives.
- Tax which can be changed are sales tax, property tax, and business tax.
- Taxes can be used to encourage any of the possible source reduction and or recycling objectives or goals.

Implementation and management implications:

- Taxes can result in a net gain or loss of revenue for the jurisdiction.
- Taxes may be difficult to administer.
- Taxes should aim to be neutral in terms of net taxation, as increased taxes will be unpopular with taxpayers, while decreased revenue will face internal resistance.
- Taxes, especially sales taxes at the point-of-purchase, can provide valuable monitoring information.
- Some taxes cannot be changed at the local level, and require state or federal action.
- Taxes can be created to provide equity for the funding of public programs. For example, battery recycling programs can be funded by the users of batteries through a battery sales tax,

APPENDIX C

rather than by the entire tax base through the property, income, or general sales tax.

Waste Evaluations

Waste evaluations are one of the most common forms of government assistance to non-residential generators. Most waste evaluations involve a trained waste auditor who tours businesses and gathers information on the amount and type of wastes produced, the types, amounts, and quality of recyclables in the waste stream, and the company's internal waste handling process. This is usually followed by a recommendation of source reduction and recycling actions.

Key design variables:

- Mandatory or voluntary participation.
- The amount of follow-up to the site visit can vary, ranging from none to active program planning and assistance by the auditor or government.
- Auditors can be government staff, haulers, members of the business community, students, professors, citizens, or professional auditors contracted by the municipality..
- Audits can be conducted over the phone or on site.

Implementation and management implications:

- Waste evaluations apply to both recycling and source reduction activities.
- May requires that staff time be allocated to providing auditing services.
- Different sectors of the economy have different waste generation patterns, requiring that the auditor be familiar with different types of nonresidential waste streams. A pool of specialized auditing staff shared among neighboring communities would be an efficient method of developing this range of expertise.
- Waste evaluations can be added to other auditing services such as energy, water, and hazardous waste audits.
- A core team of waste auditors can coordinate the results of waste evaluations with a local or regional waste exchange.
- Some firms may consider internal operations to be confidential.

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Assistance with On-site Composting and Mulching Activities

Technical and/or financial assistance can be provided to assist generators of organic waste in implementing on-site composting programs. The jurisdiction can also promote and assist the mulching of grass clippings and woody debris.

Key design variables:

- The city can promote on-site composting for a variety of materials (leaves, lawn clippings, shrubs and small wood debris).
- The city can promote "grasscycling", the natural recycling of lawn clippings by leaving them on the ground after mowing.
- The program can target a variety of generators (single family residential, multifamily residential, and institutional, commercial, and industrial).
- The city can provide composting bins free of charge, at a reduced market price, or not at all.
- The medium of technical assistance and information can include fact sheets, mailings, slide shows and seminars, demonstration facilities, and site visits and site-specific planning assistance.
- The assistance providers can be government staff, trained volunteers ("Master Composters"), or a contracted business.
- Mulching assistance can be provided on-site, using a traveling mulching machine, or at a neighborhood facility such as a park, given that the mulched material returns to its source of generation (and thus constitutes source reduction).

Implementation and management implications:

- On-site composting is preferable to centralized composting facilities in that it avoids collection, transportation, and marketing costs.
- May lead to a variety of positive (soil conditioning, nutrient enhancement, water retention, and appearance improvements) or negative (odor) environmental impacts outside of the solid waste realm.
- Some forms of mulching and on-site composting assistance lend themselves well to regional cooperation among jurisdictions.

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- Backyard composting may not be feasible with small lots.
- Zoning or other ordinances may prohibit on-site composting.

Technical assistance to businesses and industry and consumer organizations

Local government staff can assist businesses and organizations by sharing research findings and their experience and technical knowledge. Because implementing source reduction and recycling activities require some level of knowledge, the local jurisdiction can play a valuable role in sharing information so that individual firms don't have to learn everything from scratch. Providing technical assistance to industry and consumer organizations can be an efficient method of sharing ideas and the knowledge gained by working on multiple solid waste reduction programs.

Key design variables:

- The government can target different sectors where technical assistance will be in high demand and/or particularly effective.
- Technical assistance activities can target on-site waste generation and disposal problems solely, or can expand to include product and package design issues.
- The medium of technical assistance can include fact sheets, workshops, labor and management training, marketing assistance, product testing, assistance with permits and loans, and demonstration programs.
- The jurisdiction's role in industry/consumer organizations can include the instigator of the organization, the liaison with jurisdiction staff, a resource of information and ideas, and a promoter of source reduction opportunities and actions.

Implementation and management implications:

- Technical information can be shared between cities through an information clearinghouse or a shared technical assistance service, perhaps contracted out.
- Jurisdictions may need to demonstrate restraint when promote certain businesses at the exclusion of others.
- Technical assistance may require understanding of manufacturing, packaging, and industrial design.
- Follow-up surveys can be used as a form of monitoring program effectiveness.

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- Technical assistance is often offered as a result of a waste evaluation.

Educational and promotional efforts

The primary mechanism of eliciting source reduction is through educational and promotional efforts aimed at making changes in the production of goods, packaging design, and consumer buying practices. Consumer awareness programs, school curricula development, seminars, and public forums are ways in which educational programs can be presented. The targeted audiences are product designers, manufacturers, retailers, and individual and business consumers.

Key design variables:

Motivational

- source reduction education tailored to specific audiences (students, children, parents, manufacturers, retailers, designers)

Product

- method of presentation (point of sale-POS, direct mail, brochures)
- medium used (print, TV, radio, billboards, video)

Program

- responsible party (in-house, or contractor)
- source reduction alone or with recyclability, with recycled content, with reuse, with repairability, or with remanufacturability
- fact sheets with specific information about the program i.e. composting; hotlines that residents and businesses can call to have specific source reduction questions answered

Implementation and management implications:

- It will take time for people to adopt source reduction values needed to ensure long-term success of the program; therefore, it is essential that the municipalities be committed to sustaining educational programs over the duration of the program's life.
- Impact of educational efforts may be difficult to measure quantitatively.

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Awards and public recognition

Awards acknowledge the achievements of businesses, individuals and organizations with source reduction programs. Moreover, awards create favorable publicity and demonstrate a commitment from the granting body, thereby reinforcing the importance of source reduction.

Key design variables:

- conditions of eligibility
- awards for not-for-profit, private and public sector
- competitive or noncompetitive
- monetary or nonmonetary
- scale: small, medium or large businesses
- nomination procedure

Implementation and management implications:

- institutional or policy requirements
- minimal costs
- important to get enough public recognition to make award desirable
- involve local business groups
- awards may encourage development of innovative source reduction techniques

Non-procurement source reduction activities

Non-procurement source reduction includes programs such as education of employees, office changes to increase the use of scrap paper, increased use of electronic mail, sharing subscriptions, routing, and increased use of duplex copying.

Key design variables:

- Adopt office policy for printing drafts, interoffice memos, copies, filing, and subscription materials.
- Provide in-service and training videos to educate all office employees about source reduction techniques, for example, electronic mail training sessions.

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- Standardize forms within agencies, for example, multi-use forms.

Implementation and management implications:

- It will be necessary for the office changes to be presented in a manner that elicits an ownership response. If employees feel the office changes are orders being forced on them, they will resist and are less likely to comply or participate. Options include asking for input from each agency, and allowing each agency to tailor its program.
- Record keeping requirements may limit reduction of hard copies.

Demonstration Programs

Demonstration programs are model source reduction programs that can be observed by the public and private sectors. Demonstration programs provide the opportunity to see source reduction in action, and helps decision makers to visualize both the process of source reduction and its potential impact.

Key design variables:

- The display can demonstrate a variety of source reduction options, from on-site composting operations to restaurant dishwashing machines.
- The demonstration site can be purely for demonstration purposes or can be a working program.
- Private businesses with source reduction programs may be willing to provide tours or demonstrations.
- Demonstration programs can be used in support of other source reduction alternatives, including assistance with on-site composting and mulching activities, technical assistance to businesses and industry and consumer organizations , and non-procurement source reduction activities.

Implementation and management implications:

- To be most effective, demonstration programs must be convenient to observe and leave the audience with positive impressions.
- Demonstration programs can emphasize a number of different facets: cost; ease of implementation, environmental benefit,

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other technical assistance available. The audience should be considered when designing the demonstration facility.

- Some demonstration facilities can be shared between neighboring jurisdictions.
- Demonstration facilities can display other environmental actions besides source reduction, including recycling, energy and water conservation, and indoor air pollution.

Government procurement ordinances

Local adoption of ordinances that specify durability, recyclability, reusability, or recycled material content as a purchasing consideration will move municipalities toward its source reduction objectives.

Key design variables:

- ordinances specific to agency needs
- joint procurement policies with state and local governments
- joint standards for procurement to facilitate market development
- set asides, for example, an established percent of paper purchased will be recycled paper
- price preferences for products with recycled content
- percent of post consumer versus post industrial and total recycled content

Implementation and management implications:

- Joint purchase agreements between different municipalities may be difficult to negotiate.
- Cost considerations: products with recycled content are more costly than virgin materials; priority may be given to products with recycled content allowing for a cost differential of a specified percent.
- Recycled products vary in quality.
- Collection of information on availability of recycled materials may be expensive and time consuming.

Incentives for land-use practices which promote source reduction

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To the extent that specific land-use practices relate to the generation and disposal of waste, jurisdictions may promote source reduction through regulations, incentives, education, and technical assistance.

Key design variables:

- A jurisdiction can encourage xeriscaping, the planting of native, dry-climate plant species at a variety of levels (city properties, other properties; program can include education, public recognition, financial incentives, etc.).
- Similarly, a jurisdiction can promote the elimination of landscaping with plants altogether.
- A jurisdiction can change its zoning laws to encourage the convenient location of source reduction businesses. A variety of types of businesses can be included, from cottage industries (cartridge repair) to large remanufacturing plants.
- A jurisdiction can create differential price structures for renovation and demolition. For example, developing higher permit fees for demolition thereby creating incentives to renovate rather than demolish and rebuild.

Implementation and management implications:

- What constitutes eligibility for xeriscaping or "source reduction businesses" requires greater clarification.
- Xeriscaping may beneficial environmental impacts beyond reduced solid waste, such as decreased water consumption. However, a logical connection between xeriscaping and reduced solid waste has not yet been documented.
- The elimination of plants in landscaping altogether may aggravate several environmental problems, including drainage, certain forms of air pollution, and localized temperature increases during the summer months.
- Large scale xeriscaping could impact compost facilities, both in quantity and quality of feedstock.

Required waste reduction planning by nonresidential generators

Businesses can be required or requested to submit source reduction and recycling plans to the local jurisdiction. Such plans can lead businesses in the direction of analyzing their waste streams and discovering

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methods of saving money and improving their corporate citizenship through implementing source reduction and recycling programs.

Key design variables:

- Nonresidential generators can be required or simply encouraged to prepare a plan.
- Plans and planning requirements can vary in their relative emphasis on source reduction, recycling, and composting.
- Different sectors and types of businesses can be required to participate.
- Plans may require source reduction and recycling within the traditional context of waste disposal, or may require manufacturing firms to consider impact on the solid waste stream as a criteria for product and package design.
- Required plans can call for a variety of documentation, from rigorous reporting procedures to none at all.

Implementation and management implications:

- This alternative can begin as voluntary and switch to mandatory if certain goals are not met.
- Required plans can serve as a valuable reporting tool.
- Depending on the level of detail required by the plans, firms may require additional technical assistance for the preparation of reports.
- Some firms may be legitimately concerned over the confidentiality of their reports.
- Reports may create an undue compliance burden on certain firms or sectors.

Product and packaging bans

Bans arise in many forms, targeting specific products as well as specific materials. For example, aseptic packages have been banned in one state, while polystyrene has been banned in some regions.

Key design variables:

- decision makers, for example, mayoral executive order, city council decision or public vote

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- specific criteria used to determine if a material or product should be banned, for example, volume of disposed waste product in the wastestream, potential environmental impacts, energy intensiveness of product manufacture, and availability of substitute products
- scope of ban, for example, specific product or family of materials
- stipulations of the ban, for example, clauses that include built-in incentives which lead to ban unless recycling or reuse goals are met by a certain date
- stringency of enforcement, for example, revocation of business license, fines, or policing

Implementation and management implications:

- regulations effecting a ban are typically harsh and inflexible, and often meet with strong opposition from special interests
- material should be banned only if its replacement will not result in net increase in the waste stream
- materials, products, and packaging with short useful life spans are frequently targets of bans.

APPENDIX D-1

DESCRIPTIONS OF PROGRAM ALTERNATIVES

Materials Collection

1 Curbside collection of separated materials

Curbside collection is a generic term applied to the scheduled collection of recyclable materials that have been set out at households. Programs are operated by either the waste management industry or local governments. Collection equipment ranges from modified refuse trucks to high-tech automated collection vehicles equipped for segregated recyclables. Most program operators provide households with containers for recyclables. Most operators collect materials segregated by material type. However, many of the new programs are moving towards mixed recyclable collection followed by manual or semi-automated segregation at a material recovery facility.

Key design variables:

- Materials targeted to be collected
- Frequency of collection (e.g. weekly, bi-weekly, monthly)
- Degree of separation of materials (commingled, partially commingled, fully separated)
- Set-out requirements (curb or alley)
- Estimates of quantities for each material
- Type of household container

Implementation and management implications:

- Public or private collection
- Capital and operating costs
- Mandatory or voluntary service
- Scavenging of materials is often a problem
- Compatibility with other recycling programs

Summary of Design Parameters for Basic Options:

CURBSIDE COLLECTION:

DESIGN PARAMETER	OPTIONS				
	1	2	3	4	5
• Service Area	urban	urban	urban	urban	urban
• Generator Type	S-F, S-G	S-F, S-G	S-F, S-G	S-F, S-G	S-F, S-G
√ Materials Collected	NP, MWP, GL, TN, AL HDPE, PET	NP, MWP, GL, TN, AL HDPE, PET	NP, MWP, GL, TN, AL HDPE, PET	NP, GL, TN, AL	NP, GL, TN, AL
• Collection Frequency	variable	variable	variable	variable	variable
• Point of Collection	curb/alley	curb/alley	curb/alley	curb/alley	curb/alley
• Container Type/Volume	30- 90 gal cart	14 - 30 gal bin/cart	15 - 30 gal bins	10 - 30 gal bin/cart	10 - 15 gal bins
• Number of Containers	1	1 - 2	1 or more	1 - 2	1 or more
√ Collection Equipment	single bin	min. 2 bin	multi-bin	min. 2 bin	multi-bin
• Collection Crew	1	1 to 2	1 to 2	1 to 2	1 to 2
• Service Provider	pub/priv	pub/priv	pub/priv	pub/priv	pub/priv
√ Level of Truck Sorting	fully commingled	partially commingled	fully separated	partially commingled	fully separated

Code

• = Specifics to be determined at program design level

√ = Influences option variations

Generator Type: S-F=single-family residents, S-G=small generating multi-family buildings and businesses

Materials Collected: NP= Newspaper, MWP= Mixed Waste Paper, GL= Glass, TN= Tin, AL= Aluminum Cans, HDPE= HDPE Plastic Containers, PET = PET Plastic Containers

2 At-source separation collection of recyclables

Recyclable materials generated as waste from non residential sources can be separated and collected for transport to recyclables processing and marketing facilities. The responsibilities for successfully implementing at-source recycling efforts are shared between on-site personnel and recyclers, waste haulers, or others who provide the collection service and infrastructure for appropriate program promotion and for the processing and marketing of material. Some at-source separation and collection, such as old corrugated container recovery from distribution warehouses, is market driven based on the quantity and value of available materials. Other approaches for collecting multiple materials of smaller volumes per source may require funding in addition to that from materials revenue or will depend on savings realized in avoided trash collection and disposal costs.

Examples of at-source separation and collection approaches include:

- Single material recovery from generators with significant volumes of particular materials; typically old corrugated containers or office paper are targeted from business, institutional, or industrial sources. Bars and restaurants may support collection efforts for glass and/or aluminum containers.
- Multiple material collection from institutional, commercial and industrial generators. Such comprehensive efforts often involve the targeting of various materials from the functional areas which are unique to each site (cafeterias, computer rooms, retail areas, class rooms, shipping and maintenance areas, grounds, etc.).
- Specialized collection efforts including recyclables receptacles placed in public facilities, malls, parks, and transit stations and salvage or waste exchange from manufacturing processes (this may involve recycling or reuse of solvents or shipping containers/pallets and particular feed stocks, such as metals, plastic resins, or organics).

Key design variables:

- Targeted materials and facilities or generator subsectors
- Public vs. private provision of service and funding
- Degree of site tailoring and support (individual facility waste plans, audits, or evaluations)
- Degree of generator staff involvement and responsibility

- Material sorting, container, and storage requirements
- Characteristics of collection/processing infrastructure and equipment

Implementation and management implications:

- Understanding the availability, requirements, and stability of materials markets is critical for the design of at-source separation efforts.
- Lack of material storage or loading space may be an issue at some sites.
- Cooperation and training of employees and maintenance staff is generally required for successful efforts; use-friendly design helps.
- A high diversity of businesses, institutions, and industries can complicate service design and delivery.
- Seasonal variations may be a factor for some sources in the types and quantities of material generated (parks, malls, food processing)
- Added costs/savings associated with daily operations and separation activities is a concern for most generators.
- Business culture may affect some generators motivation for participating in at-source programs.

3 Mobile/stationary buy-back centers

A buy-back recycling center is a commercially located, staffed recycling facility that purchases small amounts of post-consumer secondary materials from the public. Buy-back centers typically buy aluminum cans, and may also handle glass containers and newspaper. In general, the more materials handled, the more effectively a center can compete with other, similar operations. A typical buy-back center is located along a major thoroughfare, often in buildings such as vacated service stations and small warehouses. Most centers are open five or six days a week, and are operated by several employees. The staff weighs materials and pays customers. Larger facilities may process materials with equipment such as glass crushers, can flatteners and paper balers. Storage equipment commonly used includes roll-off boxes, bins, barrels, and totes.

Reverse vending machines are also considered to be buy-back centers. They are mechanical devices that accept one or more types of empty beverage containers and issue a cash refund or redeemable coupon. Some machines will also dispense coupons and promotional materials.

Mobile centers perform the same function as the stationary centers, however, mobile centers are usually trucks or roll off bins that can be moved from site to site on a designated schedule. This provides additional convenience to the public and increases the volume of material brought to the center.

Key design variables:

- Types of materials to be handled
- Volumes of materials to be handled
- Compliance with zoning ordinance
- Processing requirements for markets
- Location relative to customers/markets

Implementation and management implications:

- Existing markets for recycled materials
- Competition with other recycling centers/programs
- Consistency with county integrated waste management plan

4 Mobile/stationary drop-off centers

A drop off-center is a recycling collection location where citizens can voluntarily deliver separated secondary materials, such as newspaper, glass containers, and metal cans. This is the most common type of residential waste recycling. These centers tend to be the easiest to initiate, and the simplest form of operation. The typical center is unattended and has one container for each type of material collected. Some drop-off facilities may include on-site processing of the materials. Convenient locations are usually selected for siting these facilities. Parking lots of shopping centers, churches and schools are often selected. They may also be located at solid waste transfer stations and landfills. Most drop-off centers do not generate enough volume to justify the cost of processing equipment. The usual procedure is to ship directly to a dealer or end user equipped to handle larger volumes. Some dealers supply and haul roll-off boxes or trailers, often paying a lower material price in exchange for the service. Participation in drop-off recycling is generally higher in rural areas where residents must haul their own trash.

Key design variables:

- Type of material collected
- Volume of material collected
- Consistency with local zoning ordinance
- Processing requirements for markets
- Location relative to customers/markets

Implementation and management implications:

- Existing markets for recycled materials
- Competition with other recycling centers/programs
- Consistence with county integrated waste management plan

5 Multi family collection of source separated recyclables

Collection of household recyclables from multi family structures/developments is an effective alternative to curbside collection where trash is placed in common area bins or dumpsters rather than in receptacles for each unit. Recycling program design for these facilities should maximize convenience for residents and haulers and should be parallel and consistent with the existing trash collection system. Container, collection vehicle, material processing, and program promotion requirements are generally different than those for curbside efforts.

Key design variables:

- Targeted materials and types of multi family sites
- Public vs. private provision of service and funding
- Types of in-unit and common area storage containers
- Assignment of responsibilities to tenants, maintenance staff, and haulers or recyclers
- Characteristics of collection/processing infrastructure and equipment
- Nature and scale of promotion and support programs

Implementation and management implications:

- Lack of in-unit and/or common area material storage or loading space may be an issue at some sites.
- Tenant turn over rates may require greater on-going promotion and monitoring efforts than for curbside programs.
- Diversity of site requirements can complicate service design and delivery (e g. tenant densities, high-rise vs. low-rise vs. trailer park).
- Feasibility of multi family programs may require a certain threshold number of units and/or sites.
- Motivating tenants can be a challenge at some sites; this may be linked to demographics.
- Added costs/savings associated with recycling service delivery may be a concern for some landlords and their tenants.

Materials Processing

6 Manual materials recovery operations

Materials recovery operations are commonly called intermediate processing centers (IPC) or materials recycling facilities (MRF). These facilities separate marketable recyclable materials such as newspapers, mixed glass, metal, and plastic containers, and process the materials for sale to end users. The facility receives waste directly from residential collection vehicles and commercial waste vehicles that collect certain recyclable safe commercial waste. Once at the facility, the vehicles proceed to the tipping area, generally an enclosed concrete pad, and the load is dumped for processing. The waste is manually picked for identifiable recyclable items such as paper, cardboard, cans, glass and plastic. Multiple pick stations are often used especially in large facilities. The end product specifications are an integral part of the facility design, especially when facility output is destined for further processing as in a compost feedstock or RDF.

Key design variables:

- Type of material targeted for collection
- Volume of material estimated to be collected
- Source of material (e.g. residential, commercial, industrial)
- Consistency with local zoning ordinance
- Processing requirements for markets
- Location relative to customers/markets

Implementation and management implications:

- Existing/projected markets for recycled materials
- Competition with other recycling centers/programs
- Consistency with county integrated waste management plan

7 Mechanized materials recovery operations

Mechanized materials recovery operations are commonly called intermediate processing centers (IPC) or materials recycling facilities (MRF). These facilities, often coupled with transfer station operations, separate marketable recyclable materials such as newspapers, mixed glass, metal, and plastic containers from raw refuse, and process the materials for sale to end users. The facility receives waste directly from residential collection vehicles and commercial waste vehicles, and also from vehicles that collect certain recyclable safe commercial waste. The vehicles proceed to the tipping area, generally an enclosed concrete pad, and the load is dumped for processing. The first major stage in the recovery operation is mixing and screening waste. A large rotary drum screen is commonly used for bag opening and mixing; bags are broken open, bulky items are set aside, and hazardous materials are removed. Next the waste is manually picked for identifiable recyclable items such as paper, cardboard, cans, glass and plastic. Multiple pick stations are often used especially in large facilities. Size reduction is achieved by use of a shredder or hammermill. Magnetic separation for removal of ferrous metals can be located ahead and after the size reduction step. Following size reduction, the waste is separated by screens, drums, and classifiers into a light fraction and heavy fraction. The end product specifications are an integral part of the facility design, especially when facility output is destined for further processing as in a compost feedstock or RDF.

Key design variables:

- Type of material targeted for collection
- Volume of material estimated to be collected
- Source of material (e.g. residential, commercial, industrial)
- Consistency with local zoning ordinance
- Processing requirements for markets
- Location relative to customers/markets

Implementation and management implications:

- Existing/projected markets for recycled materials
- Competition with other recycling centers/programs
- Consistency with county integrated waste management plan

8 Salvage at solid waste facilities

Salvage at solid waste facilities can be very simple or very complex . For example, simple salvaging at a solid waste facility is a sort and pick system where people can separate their recyclables into bins. A more complex system is an intensive recovery system, such as a material recovery facility (MRF).

Key design variables:

- sort and pick; self haulers sort materials themselves and deposit them in drop boxes or other on site storage containers.
- direct loads; diverted directly to a recovery area
- spotter; an employee assigned to spot recyclables in mixed wastes and to set them aside
- shopping carts
- type of user: self haulers, packer truck, drop box loads
- picking belts
- intensive recovery; material recovery facility (MRF)
- transformation center; refuse dry fuel
- user disposal fee reductions on remaining refuse

Implementation and management implications:

- marketing the recovered materials
- arranging for use of the processing facility, if any
- promotion and education to public
- capital investment costs vary with size of program, type of recovery method, number of materials and condition of site
- ongoing costs; labor site maintenance, utilities, insurance public education

9 At-source processing

Some non residential waste generators may be able to ship separated recyclable materials directly to end users or through regional brokers without the need for intermediate off-site processing or special hauler collection routes. The degree of on-site processing performed ranges from minimal to extensive and may result in higher prices paid to generators and reduced collection/transportation costs. At-source processing often provides an advantage of reduced storage space requirements and of increased flexibility in the types of materials recovered and in a generators ability to control marketing arrangements. The types of equipment/processes involved in at-source processing may range from the sorting of office paper grades, to the placement of converter scrap into a roll-off box for shipment to a mill, to a baler or roll-off box compactor for old corrugated containers, to a pallet shredder, to a glass crusher or can densifier for bars or restaurants. Certain sites with particular types and volumes of separated materials may develop more elaborate sorting and or processing systems. Many generators already have some of these capabilities in place.

Key design variables:

- Targeted materials and volumes generated at various sites
- Processing equipment specifications/configurations at various sites
- Capital and operating costs; revenue and other funding sources
- Degree of processing at various sites and market requirements
- The availability of processing system vendors and transportation providers
- Required level of processing equipment operator time and training

Implementation and management implications:

- Consideration should be given to the need to have duplicate processing capabilities at numerous facility versus the potential for sharing capabilities at a common facility.
- Scale of operations and material volumes at each site are critical threshold factors in determining where this approach makes sense.
- To date, the public sector role and the role of waste haulers in managing this approach has been limited; decisions have most frequently been initiated by generators in coordination with markets.
- As a result of the above, data is limited on the quantities of materials being handled through this method.

Supportive Policies

10 Mandatory materials separation ordinance

The City can require that residential and commercial generators separate their recyclables from their garbage.

Key design variables:

- which materials must be separated
- how the materials must be set out for collection
- whether or not generators must set out recyclables for the hauler or whether they can use drop off facilities or sell or donate recyclables to any person or organization operating for profit or as a non-profit enterprise.
- institute a fine structure
- enforcement mechanisms, possibly including suspension of garbage service

Implementation and management implications:

- Mandatory separation ensures greater participation than a voluntary program and is desirable for market development in that it assures a reliable flow of materials. It may, however, rule out some other recycling options such as post-collection sorting of predominantly high grade commercial loads.
- Enforcement mechanisms are an important part of any mandatory program. Obviously these involve cost to the jurisdiction.

11 Ban on disposal of designated recyclables

If a jurisdiction has control over the disposal site it can ban the disposal of certain recyclables or loads with more than a certain percentage of recyclables. Even if the jurisdiction does not have control of the disposal site it can lobby the responsible agency to institute the appropriate bans.

Key design variables:

- Determine that stable markets are available for banned materials.
- Publicize ban to haulers and generators before implementation.
- Enforce ban at landfill gates.
- Institute fine system for haulers and notification system for generators.

Implementation and management implications:

- Recovery alternatives for banned materials must be in place before the ban is implemented. Without alternative methods for reusing, recycling, or, in some cases, otherwise disposing of materials banned at local landfills, there will always be a hidden disincentive for their recovery.
- The ban must be monitored and enforced. Without effective monitoring and enforcement, compliance can neither be controlled nor directed.
- Establish clear lines of communication between regulators, haulers, and generators. The goals and methods of the ban must be clearly presented to affected parties. Many successful bans have phased-in their enforcement procedures, to allow generators and haulers time to respond to the unfamiliar regulatory requirement.

12 Policy on scavenging:

Scavenging policy can be addressed in two ways: anti-scavenging and scavenging, with anti-scavenging policies being the most common. In its most restrictive form, anything set out at the curb belongs to the city, and scavenging is prohibited at any time. An example of a milder anti-scavenging policy allows scavenging any day other than the city collection day.

Key design variables:

- scavenging or anti-scavenging policy
- type of enforcement
- implementation schedule for enforcement
- types of disincentives or deterrents used
- developed in conjunction with mandated recycling
- materials placed at curbside commingled rather than pre-separated
- increased security, drop-off containers locked at night
- drop-off container design
- set out times, hours materials are left out
- encouragement of public reporting

Implementation and management implications:

- poor weather conditions can adversely affect scavenging
- scavengers are not reliable or consistent in their pick ups because of weather, market price etc.
- increased litter as a result of scavenging
- market price of materials: what is being skimmed
- monitoring: who is responsible, who pays for it
- city depends on material collected to make its recycling program economically viable
- public opposition to limiting scavengers
- developing an equitable policy on the issue of scavenging is difficult
- Anti-scavenging laws do not prevent residents from donating recyclables to volunteer groups

13 Zoning code practices to encourage recycling

Zoning codes are one of the major tools local governments have for preventing detrimental effects on the public health, safety, or general welfare. Zoning ordinances define conditions and permit procedures for different types of development within the local jurisdiction. The ordinance should address the potential impacts of the different types of recycling facilities, the concerns of planners, and the ways in which these concerns are handled.

Key design variables:

- Types and volumes of material will be handled at the facility
- Appearance and visibility of the facility
- Health and safety of the workers and public
- Changes in local traffic volumes or patterns
- Noise
- Parking

Implementation and management implications:

- Procedures required to amend a zoning ordinance of permit a recycling facility
- Types of permits needed by recycling facilities: permit by right, administrative permit, conditional use permit, and site development permit.

14 Building codes requirements to encourage recycling

One common barrier to separating recyclables is inconvenience and lack of space. Building codes or guidelines can address this problem at the source, before the building is constructed, to help make recycling behavior and collection mechanisms an integral part of the work or dwelling place.

Building codes can be revised to require that new commercial and multifamily developments include space for recycling.

Key design variables:

- Set aside space for recycling in commercial or residential developments of more than a specific number of square feet.
- Integrate recycling and recovery into the design of the waste disposal system, for instance by putting both the recycling and disposal functions in the same area of the building.
- Include in lease or sale agreements requirements that the tenants participate in a waste reduction program as outlined in a waste management plan.
- Reasonable codes for fire, sanitation, and safety.

Implementation and management implications:

- The bureaucratic process may be slow to incorporate changes.
- May encounter resistance from fire marshals, sanitation staff, etc.
- May encounter resistance from developers.
- Single family residences would be exempt.

15 Business license requirements to encourage recycling

One approach the jurisdiction can take to encourage recycling is to attach stipulations to the acquisition of business licenses.

Key design variables:

- Businesses with greater than a specified number employees or a specified amount of waste generation must provide proof of a recycling strategy integrated into the business plan in order to obtain or renew a business license.
- The recycling strategy shall include but is not limited to the following: specification of internal collection systems, availability of balers or other machines to facilitate recycling of separated materials, waste generation expectations, a monitoring mechanism, and regular diversion reports submitted to the jurisdiction.

Implementation and management implications:

- May encounter resistance from business community.
- Such requirements may cause administrative and managerial burdens to the jurisdiction.
- The license requirements may be perceived by new businesses as a deterrent to locating in the area

* see also Source Reduction 4.3.1.5

16 Mandatory recycling service requirements for private refuse haulers

A jurisdiction can require haulers to provide recycling collection as a condition of their business licenses or franchise agreements.

Key design variables:

- Materials required to be collected.
- Required frequency of collection : weekly, biweekly, twice monthly, monthly.
- Whether the hauler must provide an incentive to recycle.
- Enforcement mechanism: how haulers will be monitored for compliance with the requirements.
- Payment system: how the hauler will be compensated for the service.

Implementation and management implications:

- Any mandatory service requirement needs not only enforcement but a clear standard of what constitutes reasonable service.
- Mandatory service requirements raise issues of equity between large waste hauling firms which can afford to capitalize recycling equipment, and small firms which cannot. This problem is more easily resolved when the haulers operate under a franchise agreement.
- A system must be put in place to handle complaints about non-complying haulers.

17. Contracted or franchised recycling service provision

Through contracts or franchises a jurisdiction can organize programs and routes. This may be particularly useful in areas which are underserved or not served at all by private haulers or recycling collectors.

Key design variables:

- Who receives collection service.
- Who provides collection service.
- Where the collection service is provided.
- What materials are collected.
- How the program is monitored and evaluated.
- The duration of the program.

Implementation and management implications:

- Contracted collection is usually less expensive than public sector collection, but may give the jurisdiction less control over the program.
- A contracted pilot program can demonstrate the economic viability of recycling collection and pave the way for private sector initiatives. Pilot programs also allow a contractor and the jurisdiction to test or compare various program strategies.

18 Cooperative marketing of recyclable materials

This alternative involves joint marketing of materials aggregated from a number of jurisdictions. Such an arrangement may assure a better price and a longer term arrangement than could be secured if individual municipalities market their materials separately.

Key design variables:

- Types of materials anticipated to be collected
- Amounts of materials to be collected
- Haul distances between jurisdictions/markets
- Processing requirements of markets
- Storage capacity at jurisdictional facilities
- Effect on the cost of processing and transporting materials

Implementation and management implications:

- A joint powers agreement will be necessary
- Agreement could also be used for joint purchase of recycled products

19 Procurement practices promoting preferential purchase or use of recycled-content products

Local adoption of ordinances that specify durability, recyclability, reusability, or recycled material content as a purchasing consideration will move municipalities toward their recycling objectives.

Key design variables:

- ordinances specific to agency needs
- joint procurement policies with state and local governments
- joint standards for procurement to facilitate market development
- set asides, for example, an established percent of paper purchased will be recycled paper
- price preferences for products with recycled content
- percent of post consumer versus post industrial and total recycled content
- conduct seminars or workshops for municipal procurement officers to address common barriers preventing widespread use of recycled paper products and to develop consensus methods of overcoming these obstacles

Implementation and management implications:

- Joint purchase agreements between different municipalities may be difficult to negotiate.
- Cost considerations: products with recycled content are more costly than virgin materials; priority may be given to products with recycled content allowing for a cost differential of a specified percent.
- Recycled products vary in quality.
- Collection of information on availability of recycled materials may be expensive and time consuming.

20 Changing existing rate structures to encourage recycling

At disposal facilities where recyclables processing or drop off opportunities have been established, charging a lower tip fee or none at all for high-grade loads provides an incentive for haulers and generators to separate recyclables from waste. For instance, loads of clean yard waste can be charged at a lower rate than garbage.

Key design variables:

- Charging less for specific materials, such as clean yard waste
- Charging less depending on the percent recyclables in the load
- Determining size of the differential
- Establishing system for monitoring loads for compliance
- Hauler education

Implementation and Management Implications

- The necessity for monitoring loads will mean greater labor costs at the disposal site.
- May encourage high grade routes.

21 Financial incentives for local investment in recycling, collection, processing, and marketing

A Jurisdiction can develop tax or accounting incentives, such as sales tax exemption, investment tax credits, accelerated depreciation, and consumption tax credits, for local investment in recycling, collection, processing, and marketing.

Key design variables:

- tax and accounting incentives in the form of deductions, exemptions, credits or reduced tax rates.
- sales tax exemptions: exempting sales tax from the purchase of recycling equipment
- property tax exemptions
- investment tax credits
- accelerated depreciation on state income tax for real and personal property purchases
- consumption tax credits to encourage the use of secondary materials

Implementation and management implications:

- Sales tax and property tax exemption may not be a determining factor in investment decisions.
- Property tax exemptions can have a significant negative effect on local tax bases when granted to larger operations.
- Tax incentive costs can be high because of forgone revenues and administrative costs
- The benefit will be in terms of increased economic activity and improved recovery of materials from solid waste
- Cost-to-benefit ratio is not known
- Tax programs require little expense to administer in comparison to financial assistance or entrepreneurial development projects.

22 Educational outreach & technical assistance to waste haulers, private businesses, recycling companies, and other groups

The municipality can conduct workshops for and give technical assistance to haulers, businesses, and recycling companies. This may include giving them information on setting up and marketing programs. It may also involve giving them a forum to allow them to share information among themselves, and express concerns. Through outreach activities the municipality can acquire input from concerned parties before changes in regulations are made.

Design variables:

- Market presentations from end users.
- Training on performing waste audits.
- Sharing of information among haulers.
- Discussion of how to meet service level requirements.
- Presentations targeted to specific industry sectors, addressing how to set up recycling programs given their particular waste streams, problems and needs.

Implementation and Management Implications:

- Workshops will likely be more effective and better attended in an environment involving mandatory collection requirements.
- Impact of educational efforts can be difficult to measure

* See also Source Reduction alternative 4.3.1.10

23 Green waste cover project

The County Sanitation Districts of LA County accept shredded and unshredded yard waste for use by the landfill maintenance crews as an alternative cover material.

Design Variables:

- Self-haul or collection by contract or franchise hauler
- Supply container if collected by refuse hauler or recycler

Implementation and Management Implications:

- May not be acceptable to CIWMB
- Potential for market saturation
- Costly, with little or no compensation to source

APPENDIX D-2

DIVERSION PROGRAM CALCULATIONS

Diversion Program Calculation Sheet for Commerce (Disposed Wastes)

ST 91,500 tons disposed; MT 1.043% greater in 1996 (~95,400)

Alternative	Type Mat'l	(1) Gen Shar %	(2) Sect Shar %	(3) Comp %	(4) Part rate %	(5) Sep eff.%	Div ST TPY	Div MT TPY
CITY RECOVERY PROGRAM	OCC	0.6	35	20.5	70	80	22	23
	High grade paper	0.6	35	2	70	80	2.2	2.3
AT-SOURCE COLLECTION AND PROCESSING	OCC	100	93	20.5	50	80	2626	2738
	High grade paper	100	93	2	50	80	256	267
EXPAND RECYCLING (CITY AND BUSINESS)	NEWS	100	93	3.9	50	80	NA	500
	MP	100	93	6.7	50	80	NA	894
	HDPE	100	93	1.3	50	80	NA	173
	CRV G.	100	93	2.2	50	80	NA	294
	GLASS	100	93	0.9	50	80	NA	120
	AL	100	93	0.1	50	80	NA	13
	TIN	100	93	1.0	50	80	NA	133
COMBINATION BUYBACK AND DROPOFF CENTERS	NEWS	100	7	7	40	90	161	168
	MP	100	7	13.5	40	90	311	325
	HDPE	100	7	1.1	40	90	26	27
	PET	100	7	0.7	40	90	16	17
	CRVG	100	7	2.5	40	90	57	60
	GLASS	100	7	3.2	40	90	73	76
	TIN	100	7	2	40	90	45	47
	AL	100	7	0.5	40	90	11	12

Note: The diversion quantities in the short- (ST) and medium-term (MT) are calculated by multiplying, first, the percentages identified in Columns 1 through 5 together. Then, the yielded percentage is multiplied by the total annual available ST and MT tonnages in the years 1991 and 1996 from the Quantity Projection Tables (see the Solid Waste Generation Analysis).

MANUAL MATERIALS RECOVERY FACILITY	GLASS	100	100	5	25	25	NA	298
	NEWS	100	100	6.2	25	25	NA	369
	MP	100	100	8.1	25	25	NA	482
	OCC	100	100	4	25	25	NA	241
	AL	100	100	0.1	25	25	NA	6
	TIN	100	100	2.1	25	25	NA	126
	FE	100	100	1.2	25	25	NA	72
	HDPE	100	100	1.2	25	25	NA	72
	PET	100	100	0.1	25	25	NA	6
	WOOD	100	100	4.8	25	25	NA	289
RESIDENTIAL COLLECTION	GLASS	75	7	3.4	60	80	NA	81
	CRVG	75	7	1.5	60	80	NA	36
	NEWS	75	7	6.2	60	80	NA	117
	AL	75	7	0.1	60	80	NA	18
	MP	75	7	8.1	60	80	NA	144
	TIN	75	7	2.1	60	80	NA	55
	HDPE	75	7	1.2	60	80	NA	31
	PET	75	7	0.1	60	80	NA	18
MULTIFAMILY COLLECTION	GLASS	25	7	3.4	60	80	NA	27
	CRVG	25	7	1.5	60	80	NA	12
	NEWS	25	7	6.2	60	80	NA	39
	AL	25	7	0.1	60	80	NA	6
	TIN	25	7	2.1	60	80	NA	18
	HDPE	25	7	1.2	60	80	NA	10
	PET	25	7	0.1	60	80	NA	6
COMMERCE WTE	ALL WASTE	100	100	100	100	100	NA	11,890

Note: The diversion quantities in the short- (ST) and medium-term (MT) are calculated by multiplying, first, the percentages identified in Columns 1 through 5 together. Then, the yielded percentage is multiplied by the total annual available ST and MT tonnages in the years 1991 and 1996 from the Quantity Projection Tables (see the Solid Waste Generation Analysis).

APPENDIX D-3

RECYCLING ALTERNATIVES EVALUATION TABLE

<u>Alternative Criteria</u>	Curbside Collection	Drop-off Center	Buy-Back Center	At-source Collection	Multifamily Collection	All Processing Alternatives
<i>Total Cost</i>	Expensive to start up; Cost of labor	Low equipment costs; Cost of land >> \$ return	Low equipment cost; Cost of land > \$ return	Existing equipment; Private sector	Existing equipment; private sector	Cost of labor; Private sector usually; Large sources only
<i>Waste Reduction Effectiveness</i>	>5-25%	<5%	5-10%	>5-25%	5-10%	>10-50%
<i>Ease of Finance</i>	Difficult to fund trucks; Low collection yield & \$ return	Land cost >> \$ return	Land cost > \$ return	Existing equipment; Concentrated sources	Existing equipment; Concentrated sources	New mode; Single source
<i>Potential Hazard</i>	Traffic; aesthetics	Noise and litter; minimal impact	Noise and litter; minimal impact	Traffic only	Noise and litter; minimal impact	Noise; Worker safety
<i>System Flexibility</i>	sensitive to changes in mat'l	able to adapt to waste changes	able to adapt	Oldest type of collection	able to adapt to waste changes	New type; unproven
<i>Shift in Waste Type</i>	no impact	No impact	No impact	No impact	No impact	No impact
<i>Technically Reliable</i>	extensively used	extensively used	extensively used	extensively used	Unproven	Unproven
<i>Equipment and Personnel Availability</i>	Some training and personnel requirements	No training, some supervision; available equip	Ability to handle money; available equip	Some training and personnel requirements	No training, some supervision; available equip	Needs supervision and specialized workers

Recycling Alternatives Evaluation

<i>System Compatibility</i>	Can target variety of mat'ls; highly compatible	Profit center; single materials	Needs established markets; may cause dislocation in other programs	Compatible; hauler sponsored	Compatible; hauler sponsored	Single source; need for coordination with local plans
<i>Institutional Barriers</i>	Citizen noncompliance	Minimal	Some opposition due to profit center	Minimal	Unproven with some generators; lack of coordination in sector	Unproven with some generators; lack of coordination in sector
<i>Consistency with Local Policy</i>	Nonsistent with hierarchy	Consistent with hierarchy	Consistent with hierarchy	Consistent with hierarchy	Consistent with hierarchy	Consistent with hierarchy
<i>Facility Requirements</i>	No new facility needed	Needs facility	Needs facility	No new facility needed	No new facility needed	Needs facility
<i>Implementability in ST/MT</i>	Moderate timetable	Minimal timetable	Minimal timetable	Minimal timetable	Moderate timetable	Moderate timetable
<i>Market Condition</i>	Sensitive; low value goods	Less sensitive; low value goods	Profit making; high value goods	Concentrated sources only	Concentrated sources only	Large quantities per collection source
<i>Publicly Acceptable</i>	Yes	Yes	Yes	Yes	Yes	Depends on site
<i>Privately Acceptable</i>	Yes	Yes	Yes	Yes	Yes	Yes
<i>Private Sector Participation</i>	Yes	Yes	Yes	Yes	Yes	Yes

<u>Alternative Criteria</u>	Mandatory Separation	Disposal Ban	Scavenger Policy	Zoning and Building Code Changes	Business Recycling Plans	Hauler Service Requirement
<i>Total Cost</i>	Cost of enforcement may be high; but revenues could outweigh program cost	Cost of enforcement may be high; but revenues could outweigh program cost	Policy reduces material loss; return should outweigh cost of development	Revenues should exceed costs	Revenues should exceed costs	Low to city but hauler charges reasonable rate;
<i>Waste Reduction Effectiveness</i>	Excellent	Can effect total diversion of item, but must have alternative end uses available	Can improve collection efficiencies, but does not add any materials	Can improve collection by promoting storage capacity	Pass along state mandated diversion targets to business	>5 to 25%
<i>Ease of Finance</i>	Usually good	Usually good	Not required	Burden on regulated community	Burden on regulated community	Existing service can finance easier
<i>Potential Hazard</i>	Danger of illegal disposal	Danger of illegal disposal	None	None	None	Some traffic
<i>System Flexibility</i>	Can be changed to include other materials	Can be used to catch materials not being separated	Can dislocate poor and less fortunate	Takes time to implement, not good for retrofit	Performance based, not design based	Adds services
<i>Shift in Waste Type</i>	None	Can have good effect	None	Can shift from durable to compressible items	None	Beneficial

Recycling Alternatives Evaluation

<i>Technically Reliable</i>	Used in many communities	Unproven for recyclables	Needs enforcement mechanism	Unproven, takes years to implement	Used in other sectors such as hazardous waste	Depends on price
<i>Equipment and Personnel Availability</i>	Needs enforcement personnel	Needs enforcement personnel	Design based	Design based	Private sector	Available
<i>System Compatibility</i>	Usually good as all programs benefit	Usually good as all programs benefit	May dislocate scavenging personnel	Depends on local siting requirements	Usually good as private sector oriented	Integrates hauler into collection of recyclables
<i>Institutional Barriers</i>	Some opposition	None at this time	Impact on informal sector	Some resistance from developers	ICI may not want to participate	None at this time
<i>Consistency with Local Policy</i>	Inconsistent	Consistent	Consistent	Inconsistent	Consistent	Consistent
<i>Facility Requirements</i>	None	None	None	None	None	None
<i>Implementability in ST/MT</i>	ST	ST/MT	ST	MT	ST	ST
<i>Market Condition</i>	Needs markets, but guarantees supply	Needs markets	Beneficial	Increases supply	Increases supply	Increase materials
<i>Publicly Acceptable</i>	Generally resisted	Action can broaden impact to ICI sector	Usually positive response	Less acceptable among regulated owners	No effect	Acceptable
<i>Privately Acceptable</i>	Usually if collecting, not if separating	Resisted	Usually positive response from collectors	Less acceptable	Less acceptable	Acceptable
<i>Private Sector Participation</i>	Good	Good	Good	Good	Excellent	Excellent

Recycling Alternatives Evaluation

<u>Alternative Criteria</u>	Marketing Cooperativ	Purchase Policy	Rate Changes	Contract Recycling Service	Financial Incentive	Outreach/ Technical Assistance
<i>Total Cost</i>	Can improve value of recyclables	Higher startup costs but may improve as usage increases	Those who produce more pay more--only residential sector	Duplicative services can be more expensive	Expensive; limited funds	Expensive; need for technical expertise
<i>Waste Reduction Effectiveness</i>	<1 to 10%	<1%	Found to be significant (>20%)	>5 to 25%	Unless applied across sector, little return	Education requires expertise
<i>Ease of Finance</i>	Low cost - easy to finance	Usually costs more at start (supply/demand)	Generates revenues, but may be difficult to "sell"	Start up services may be more difficult to finance	Difficult	City understands necessity for funding
<i>Potential Hazard</i>	None	None	Increase in illegal dumping	Duplicative services	None	None
<i>System Flexibility</i>	Unproven	Limited to what's available	Rates can be changed	Adds services	Fair; takes time to implement	Responds well to changes and can include all efforts
<i>Shift in Waste Type</i>	No data to determine effect	Not much effect	Beneficial	Beneficial	None	Beneficial effect
<i>Technically Reliable</i>	Unproven	Reliable, but market fluctuations	Some adjustments required	Depends on price	Depends on circumstance	Used as basis of many city programs
<i>Equipment and Personnel Availability</i>	Unavailable	Information not available on goods	Standardized containers	Available	Little experience present on such alternative	Need to add personnel; ed. materials

Recycling Alternatives Evaluation

<i>System Compatibility</i>	Should improve markets	Adds to markets	Not used in Los Angeles as yet	Adds duplicative services	Can be challenged by other sectors	Good compatibility
<i>Institutional Barriers</i>	City versus private sector	Higher cost for same material limits application	Citizens may object	Haulers object to duplicative services	Problem with finding funding	Usually none to education
<i>Consistency with Local Policy</i>	Consistent	Consistent with market development	Inconsistent with keeping costs low	Consistent	Inconsistent	Consistent
<i>Facility Requirements</i>	None	None	None	none	None	None
<i>Implementability in ST/MT</i>	ST	ST	ST/MT	ST	MT	ST
<i>Market Condition</i>	Improves marketability of materials	Improves markets	Needs markets to offset higher prices of collection	Set up by markets	Poor	Good, as not as much money required
<i>Publicly Acceptable</i>	Acceptable	Acceptable	Unacceptable	Acceptable	Unknown	Excellent response; most feel this is real goal of gov't
<i>Privately Acceptable</i>	Less acceptable	Opens additional markets for suppliers	Yes, as it is already done for private sector	Acceptable except to competitors	To some but not to others	Yes
<i>Private Sector Participation</i>	Less acceptable	Excellent	No impact	Excellent	Potential for participation	Potential for participation

APPENDIX E

PROGRAM OF PROGRAM ALTERNATIVES

5.3.1.1. Materials Collection Alternatives

5.3.1.1.a. At source collection of materials

Specified yard waste types (e.g., grass, leaves, brush < 4" diameter) are picked up by municipal crews or contracted haulers. Generators who set out material for such collection are typically single-family households, less typically business establishments. Collection frequency depends on quantities generated from one week to the next, and among seasons. Material may be transported directly off route to a processing facility, or may be off loaded for temporary storage at a transfer point, from where it is transported to a central processing facility.

Key Design Parameters:

- Type of households served
- Number of targeted households
- Collection frequency and seasonality
- Material types collected
- Loose or contained material
- Container construction and capacity
- Number of containers
- Collection vehicle type/capacity
- Automated or manual loading

Implementation and Management Implications

- Municipal or contracted operation
- If municipal collection, coordination of city agencies
- Collection equipment ownership
- Mandatory or voluntary separation of yard waste from refuse
- Household container ownership and distribution
- Promotion/education outreach to community
- Space for housing new truck fleet

5.3.1.2. Materials Pre-processing and/or Storage Alternatives

5.3.1.2.a. Decentralized Materials Preprocessing and/or Storage

Yard wastes (e.g., grass, leaves, brush < 4" diameter) are delivered to one of several remote sites for volume reduction and/or densification (referred to as preprocessing). After the materials have been reduced in size or densified, they may either be stored temporarily or shipped directly for final processing (composting) or other beneficial use (boiler fuel, mulch, etc.).

Key Design Parameters:

- Type of yard wastes collected
- Volume of materials handled
- Material delivery frequency and seasonality
- Condition of material as delivered
- Intended end use of material
- Degree of automation
- Available land
- Degree of source separation

Implementation and Management Implications

- Municipal or contracted operation
- If municipal operation, coordination of city agencies
- Equipment ownership
- Mandatory or voluntary separation of yard waste from refuse
- Promotion/education outreach to community
- Facility siting

5.3.1.3. Composting Alternatives

5.3.1.3.a Yard Waste Composting

Yard waste composting involves the composting of organic materials derived from landscape maintenance, land clearing and other activities involving the trimming or removal of herbaceous plantings. Because of the high carbon-nitrogen ration, decomposition takes place slowly and can take up to 24 months to complete.

Key Design Parameters:

- Number of sites
- Site location
- Site size
- Materials accepted
- Material preparation
- Type of handling equipment
- On-site processing equipment
- Site monitoring
- Material drop fee

Implementation and Management Implications:

- Ownership/Operator
- Establishing cost efficient and equitable fee
- Environmental impacts
- Zoning
- Land use planning
- Promotion/education outreach (startup and ongoing) to community

5.3.1.4. Supportive Policy Alternatives

5.3.1.4.a Local ordinances mandating source separation of yard wastes and other organics

City ordinances may be enacted that require residents or businesses to separate yard waste, and possibly other organics, from refuse collected by City crews or contracted haulers. Contracted haulers may have responsibilities in promotion/education and enforcement, as provisions of a contract with the city.

Key Design Parameters:

- Responsible parties
- Material types targeted
- Targeted generators
- Enforcement methods

Implementation and Management Implications

- Political support
- Equitable application
- Enforcement resources
- Cooperation of contracted haulers

5.3.1.4.c Business permit requirements to encourage source separation of yard wastes and other organic materials

Permits or licenses to conduct business within jurisdiction limits are used as a mechanism to encourage source separation of yard wastes and other organic material from refuse. Fee or surcharges may be attached to licenses for haulers, landscapers, and large generators of green waste. As an example, fees may be waived for compliance with source separation provisions in the permitting process.

Key Design Parameters:

- Magnitude of fee
- Types of businesses targeted
- Materials targeted

Implementation and Management Implications:

- Equity in applying restrictions or other provisions

5.3.1.4.e. Local, regional and/or state financial incentives for market development/marketing of products derived from yard wastes and other organic materials

This alternative could include tax breaks or subsidies to businesses producing compost from organic waste materials. It could also involve a surcharge on soil amendments made from virgin materials.

Key Design Parameters:

- Fee structure
- Magnitude of tax or subsidy

Implementation and Management Implications:

- Political support
- Equity of application

APPENDIX F

AGENCY COMMENTS AND CITY RESPONSES ON PRELIMINARY DRAFT SRR ELEMENT AND HHW ELEMENT

CALIFORNIA INTEGRATED WASTE MANAGEMENT BOARD

1020 Ninth Street, Suite 100
Sacramento, California 95814



October 18, 1991

Mr. Raymond C. Ramirez
Assistant Director of Community Development
City of Commerce
2535 Commerce Way
Commerce, CA 90040

RE: Board Comments on the City of Commerce's
- Preliminary Draft Source Reduction and Recycling Element

Dear Mr. Rameriz:

California Integrated Waste Management Board (Board) staff have reviewed the City of Commerce's Preliminary Draft Source Reduction and Recycling Element (SRRE) for compliance with Chapter 9, Title 14 of the California Code of Regulations, the Planning Guidelines and Procedures for Preparing and Revising Countywide Integrated Waste Management Plans. Below are comments applicable to the document in general. Attached to this letter are staff comments specific to each of the components, organized by SRRE component section. These comments, and all other comments received by Commerce, should be addressed in the revised SRRE.

GENERAL COMMENTS:

Although the Introduction was not required by our regulations, staff found it helpful as guidance in our review. It was noted that the City of Commerce intends to take the mandates and intent of AB939 seriously and plan accordingly with dedicated staff and revenues.

The review of the City of Commerce's document has identified certain, though not necessarily all, areas of possible concern. While some appear to be merely lack of clarity, others may have more serious ramifications. In the revised SRRE, please address:

- 1 * the discussion required by the regulations for each alternative in the components, specifically CCR Sections 18733.3, 18735.3, and 18736.3;
- 2 * the availability of program specific data on existing conditions to adequately assess the effectiveness of particular programs and evaluate the appropriate course of action;
- 3 * the ability to quantify source reduction efforts in the future;
- 4 * contingency plans in case envisioned hauler or processor roles cannot be fulfilled;
- 5 * the selection of a green waste diversion program that may not be eligible to count toward diversion goals.

- 6 Every component identifies the Community Development Department as the entity responsible for program monitoring and evaluation. Included within each component are references to the Community Relations Department, the City Council, the Finance Department, the City Attorney, and the private sector as being responsible for specified program tasks. The relationship of each of the individual entities and the CDD needs to be explained, particularly the integration of the individual task monitoring and the compilation of the information/data into the CDD for inclusion into the annual report to the City and the Board.
- 7 While it is recognized that planning is often partly based on many intangible concepts (i.e.- politics, social trends, third party effects, etc.), staff hopes that the above concerns will solicit a thorough analysis of available information to insure that the appropriate course of action has been selected. Also please remember that the SRRE is a planning document, and as such should be flexible in its implementation. Contingencies may be needed to also account for changes in population, waste loadings, legislation, etc.
- 8 In the revised SRRE, please include either the Environmental Information Form, the Environmental Checklist Form, the Notice of Preparation, and the Negative Declaration, or provide documentation that the documents have been circulated through the State Clearinghouse for agency review.

If you have any questions about our comments, please contact me at (916) 327-0441, or Lloyd Dillon of the Division's Local Assistance South Section at (916) 323-5362.

Sincerely,


John D. Smith, Supervisor
Planning and Assistance Division,
Local Assistance Branch

cc: LA Co. LTF
EMCON

Commerce SRRE
CIWMB COMPONENT-SPECIFIC COMMENTS

In the following comments on the preliminary draft SRRE, please note that all comments which include a reference to the CCRs or to the PRC concern regulatory or statutory requirements and should be fully addressed in the revised SRRE. Other comments are Board Staff suggestions based on technical review and are provided for your consideration. The exception to this, which should be fully addressed, is a request for missing information, a definition, or to clarify a discussion.

SOLID WASTE GENERATION STUDY and ANALYSIS (Section 2)

GENERAL SWGS COMMENTS:

As required by CCR Section 18722(i), please identify all permitted transfer stations, solid waste transformation facilities, and solid waste disposal facilities used by the City of Commerce

PRC Section 41780 excludes inert solids, agricultural wastes, scrap metals, white goods and sludge from the definition of solid waste, except those "...which were disposed of at a permitted disposal facility as of January 1, 1990, which are diverted and which are recycled, composed or reused." Therefore please document landfill records or other reports for the presence of the above named items in the landfill(s), so that any potential diversion credits for these items can be applied.

Page 2-9, Street Sweepings:

Because of the potential presence of hazardous waste content, such as asbestos from car brake linings, instead of just allotting these wastes to "commercial and residential sources", Board staff recommends street sweepings be listed as a special waste.

Page 2-9, Self-Haul Disposal:

The text for this section indicates that self-haul waste was allocated equally between the commercial and residential sectors. What was the basis for the 50/50 disaggregation of self-haul waste between commercial and residential sources? [CCR section 81724(b)]. Please provide the rationale the City used, including references to other studies or reports.

Page 2-16, Field Sampling and Sorting:

In the final SRRE, please provide a discussion on how the selected truck loads were representative and randomly selected. [CCR section 18722(h)]

Page 2-19, Field Sampling and Sorting:

Please provide a brief description [CCR section 18722(h)] of the random sampling method used to:

- a) -select the initial 300-400 pound loads.
- b) -select a 200 pound sub-sample from the initial 300-400 pound samples.

Page 2-38, Source Reduction Survey:

For the household's diversion random telephone survey, please provide the following information, as per CCR section 18722(h):

- a) - How was the sampling "randomized"?
- b) - How did the survey assure that the sampling was representative of the City's population? e.g., was a cross section of income levels, ethnicity, dwellings sampled?

6 Were the necessary adjustments made to the estimates of household items donated to thrift shops, etc., to compensate for those items unsalable by the thrift shops which are ultimately discarded to the landfill? [CCR section 18734.2.]

7 **Page 2-40, Appliance Repair:**

Was the severity of the repairs made to any type of appliance taken into account? For example, the replacement of a compressor in an old washer will extend its useful life, but a tune-up or cleaning would not. [CCR section 18734.2.]

18 Documentation provided for the weight and average life expectancies of appliances, etc., is incomplete. Please provide complete rationale and references for the information. [CCR section 18734.2.]

19 **15 Year Waste Generation Projections Tables:**

In the 15 year generation projection tables, it is not clear to Board staff what "disposal" and "diversion" listed under the category "Incineration" refer to.

20 PRC section 41783 states that for diversion credit, transformation may not account for more than 10% of the 50% diversion goal, and, only after 1995. The City of Commerce 15 year waste generation projection tables show 100% of the diverted transformation quantities counted after 1995. Please correct these tables to indicate the allowable or claimable percentage after 1995. To show total diversion, the City may wish to provide an additional column or row.

21 **SOURCE REDUCTION COMPONENT (Section 3)**

PRC Sections 41050 through 41054 address the requirement for each city SRRE to include a Source Reduction Component. CCR Sections 18733 through 18733.6 identify the contents of the SRRE model component format, generally what each component must address. CCR Sections 18734 through 18734.3 specifically identify additional information to be included or at least addressed in the Source Reduction Component. Please provide the information as required by the code and the regulations.

RECYCLING COMPONENT (Section 4)

22 **Page 4-4, Existing Programs:**

Page 4-4, section 4.2, states that there are established recycling programs in the City. There was no identification of jurisdiction specific recycling programs for the commercial or industrial sectors under this discussion, only the City sponsored curbside collection for 570 households was identified on page 4-5. Are all the commercial and industrial sector programs purely voluntary?

23 Also, this section does not identify the materials targeted by each of the existing recycling programs. How are the post-consumer concrete, cardboard, ferrous metals, and wood waste recycled? Is the wood waste recycled as fuel?

24 CCR Sections 18733.2 and 18735.2 identify the scope that the descriptions of existing recycling programs must include. Please expand the pertinent discussion to include the required information, or, if that information is included in another component or appendices, please reference that source.

Page 4-10, Existing Programs:

Section 4.4.1.1 states that the existing programs will be expanded by the end of 1992, and that the residential curbside collection pilot program would be expanded. A schedule for expanding or modifying any of the existing programs or for the expansion of the City's residential curbside collection program is not included in the implementation schedule, Table 4-7. Please identify the tasks necessary for expanding these programs and the target start and completion dates.

Page 4-10, New Programs:

Please address all the information to be provided by the regulations, specifically those in CCR Section 18733.4. Noticeably lacking from the City's discussion is an estimate of the anticipated diversion by waste type and program and the percentage each program contributes towards meeting the diversion goals.

Page 4-12:

Private haulers would be encouraged to utilize the County of Los Angeles Sanitation Districts' yard waste alternative cover program, (Alternative 23). Please note the following concerning green waste diversion and landfill cover:

The use of yard waste, "green waste", as landfill cover is not permitted for widespread application by the Board. Scholl Canyon and Puente Hills landfills in Los Angeles County may use green waste as cover, under controlled situations, to meet "performance standards". An expansion of the Spadra landfill was recently approved by the Board. This expansion includes a provision for a green-waste-as-cover demonstration program.

While it may be the case that shredded or chipped, uncomposted green wastes are being incorporated as part of daily operations at some landfills, this practice does not make this material an approved daily cover. These facilities are assumed to be on what is commonly known as "performance standards". "Performance standards" refers to a facility management practice that differs from default cover regulatory requirements but is aimed at achieving similar environmental protection. The use of green wastes at these facilities does not constitute the use of an approved alternative cover material. Rather, the use of green wastes assists these facilities in meeting "performance standards".

For green waste to be deemed as suitable alternative cover, the landfill operator must submit a proposal request to the Board and to the LEA for consideration. If the Board approves the request, the operator must establish a demonstration project, which would normally last at least one year. At the end of that demonstration project period, the Board and the LEA would evaluate the suitability of the demonstration cover material. If the Board and the LEA approve the material as "alternative cover", the operator would then file an Amended Report of Disposal Site Information and an application to revise the Board issued permit. After the permit is revised, the proposed material could be used as cover. By definition, however, the green waste material being applied at certain facilities is just that - a waste material and not an approved alternative cover material.

On page 4-16, section 4.4.3.5, a second market, the United Pacific Corporation yard waste processing facility is identified for use of the processed yard waste-prunings. Does this processing company utilize only yard wastes in its processing, or does it include sludge as part of the compost additives? If so, using this facility will not count for diversion credits at this time. Current legislation could allow some percentage of sludge diversion to be countable towards meeting the mandated goals, after October 1992. In the meantime, we suggest that the City investigate alternative composting programs for implementation in the short-term planning period.

Page 4-14, Anticipated End Users of Recycled Materials:

29 The discussion here identifies existing markets for wastepaper, glass and metals, and states that there is no current market for plastics. The discussion also indicates that existing markets for paper, glass, and metals is depressed, declining, or glutted at this time. Only for plastics does the discussion identify ongoing, future development. Please address future market development activities for the other diverted materials, required by CCR Section 18735.4(b).

30 Will the yard wastes be diverted to the County Sanitation District program or to UPC? Please clarify this in the revised SRRE.

Pages 4-18 and 4-19, Table 4-7:

31 Please refer to the comment about including tasks and schedules for expanding the City's existing programs. Also, the tasks should include more positive statements. Rather than "review", "assess", "evaluate" the City should be orientated towards "develop", "inact", and "require". If a program is chosen, assignment of a task to develop and implement that program should not be difficult. The tasks identified for Alternatives 15, 17, 19, and 22 are examples of positive, implementable statements.

Page 4-20, Table 4-8:

32 This table includes the capital and annual costs for the recycling programs. This table does not appear to address all the selected programs nor does it include projected costs for the development or design of the selected programs. Please revise the table to include these items.

Page 4-21, Monitoring and Evaluation of Programs:

33 The City proposes to utilize a report and records keeping mechanism. Will the City of Commerce's designated monitoring department, the CDD, integrate the results of these reports? Will the CDD integrate these reports with other reports and surveys? There also needs to be a mechanism established to verify the information received. Please address these concerns in the revised SRRE.

Page 4-22, Contingencies:

34 Please identify what mechanism or trigger the City will use to determine when a contingency plan of action would need to be implemented. For example, would a trigger be only reaching 80% of a goal by a timed deadline, or would evaluations be considered after reviews of the annual report.

COMPOSTING COMPONENT (Section 5)

Page 5-3, Existing Programs:

35 CCR Section 18736.2 requires the component to address local market activities, economic activities, consumer incentives, and government procurement practices within the jurisdiction. This section of the component does not address these items. Please address these in the revised SRRE.

36 Other than the amount of yard waste known to be diverted by a local tree service company (184 tons/year), is any additional diverted material attributed to self-haul? It is unclear from the discussion in section 5.2.1 if the tree service is the only diversion program and if UPC is the only composting operation, and if any of the yard waste delivered to the UPC facility by self-haul to be processed is from Commerce sources. Please clarify these items in the revised SRRE.

Page 5-9, Alternative 5:

37 It is not clear from either the discussion in this section or in Appendix E exactly what yard waste composting program the City will implement. Is the intent to develop backyard composting? Please address this in the revised SRRE.

Page 5-11, Table 5-4:

38 The stated objectives for composting are to divert 25% and 50% of the total yard waste by the years 1995 and 2000 respectively. Waste disposal composition tables (2-16, 17, and 18 on pages 2-43 through 2-45) show a total yard waste generation of 4,143 tons per year. The 15 year waste generation projection tables have 2,501 tons diverted in 1994 and 4,028 tons diverted in 1999. How do the figures for targeted diversion quantities of 1,400 pounds for 1995 and 1,430 pounds for 2000 mathematically relate to the 25% and 50% objectives? Staff calculates 1,036 tons and 2,071 tons respectively. Please clarify this in the revised SRRE.

Pages 5-14, Table 5-5 and 5-6, Table 5-7:

39 Not all the alternatives selected for implementation are identified in these plan tables. For instance, tasks for Alternatives 7 or 9 are not identified on the short-term implementation plan table, nor are tasks for Alternative 8 identified on the table for the medium-term implementation plan. Please address this in the revised SRRE.

Page 5-16, Table 5-7:

40 This table includes the capital and annual costs for composting program implementation. This table does not appear to address all the selected programs nor does it include projected costs for the development or design of the selected programs. Please revise the table to include these items.

Page 5-13, Preprocessing:

41 There is a discrepancy between the volume of loose material collected on this page and on the next page in section 5.4.7.3.

Page 5-18, Table 5-7:

42 This table includes the capital and annual costs for one composting program. This table does not address all the selected programs nor does it include projected costs for the development or design of the selected programs. Please revise the table to include these items.

Page 5-18, Monitoring Methods for Objectives:

43 Will the records and reports furnished by the hauler include information about the actual diversion activity, including the quantity of material diverted by program and the end use/user for that material? How will the City get the tree service to provide records? Through a requirement of the business license?

Page 5-21, Responsible Parties:

44 This section does not identify the City entity responsible for monitoring the compost programs.

45 The Implementation Plans indicate the CDD, Private haulers and generators, and the Private sector are responsible for certain aspects/tasks of the programs. Will Commerce's designated responsible party be responsible for generating and/or receiving reports and data? The City, preferably the CDD, also needs to develop a mechanism to verify the information received.

SPECIAL WASTE COMPONENT (Section 6)

Page 6-2, Existing Conditions:

Even though sludge is not countable in the waste generation figures or is creditable in the diversion programs, PRC Section 41250 states that the Special Waste component shall address the disposition of sludge generated in the City. Please identify the quantity and disposal techniques and facilities Commerce uses for sludge.

Pages 6-2 through 6-5, Program Alternatives:

As required by CCR Section 18733.1, please include a discussion of other regulatory agency requirements, permits, documents, associated with operation of facilities associated with the collection or processing of these wastes. Please list categories or type of quantities in volume or weight diverted for each alternative.

Page 6-2, Alternative 1 - Ash Recycling Program:

The City program is proposing to divert the ash generated from the CREF facility. There is a discrepancy of the tonnage attributable to ash, 21,329 tons in Table 2-49, 21,652 tons in Tables 2-12 and 2-18, and 21,680 tons in Table 6-1. Please identify the reference for the tonnage used. Also, the discussion about percentages diverted and the amount of ash diverted is confusing. Staff calculations vary from those given in this section. It might be beneficial to include the projected diversion credits, including percentages, in a table.

On page 6-4, the end use is proposed to be as roadbase at the Puente Hills landfill. What happens to the program or the processed material when the roadways at Puente Hills are complete? How long is this diversion projected for? Does the City have a contingency in mind for other roadbase or construction related projects? Has the City, or CREF, investigated the use of this material as roadbase outside the Puente Hills landfill?

One of the institutional barriers that should be discussed would be the application, and acquiring, the SWFP from the Board and the waste discharge permit from the regional water quality control board.

Under the Estimated Cost Rating only the initial capital investment is identified. What about annual savings, annual O and M costs, and the costs of developing and implementing the process?

Page 6-4, Alternative 2 - Used Tire Program:

The alternative is well presented, except that it could be more active. Local stations and stores would "be requested" to participate by providing used tires for sale and by participating in retreaded tires process. The City would also "allow" the use of asphalt-rubber for roadway repair. The City could take a more positive stance by requiring the use of some percentage of rubber-asphalt for roadway, parking lot, playground, etc. construction and repair.

Another plan the City could consider would be to require a refundable deposit on all new tires sold within the jurisdiction, or similar rebate for using retreaded tires.

Page 6-6, Alternative 3 - Construction and Demolition Waste Program:

If the City is proposing to recycle C/D material, why is there no discussion in the Recycling Component about a recycling program for C/D material? If the City of Commerce intends to count diversion credits for the recycling of the C/D waste materials, that recycling program must be addressed in the recycling component. The proposed end use of the diverted inert materials (rock, concrete, brick, sand, soil, asphalt, sheetrock) is "construction activities". The discussion should be more specific. Not all of the identified materials are easily recycled into other construction projects, sheetrock or bricks for example.

55 The amount identified for diversion in the year 2000 is 6,238 tons. Table 6-1 has it listed as 6,283 tons. Please correct the incorrect figure.

56 **Page 6-9, Anticipated Diversion:**

The anticipated diversion tonnage in the text is 28,576 for the short-term and 26,913 for the medium-term. Table 6-1 lists the diverted amounts as 28,148 tons and 29,235 tons respectively. Please either explain the discrepancy or correct the incorrect figures.

57 **Page 6-10, End Uses:**

Would the paving blocks and construction blocks come from the C/D diverted materials, or would they be made from the processed ash? The way they are listed, it is assumed they would be made from the processed ash. If the bricks are to be made from the processed ash, this should be addressed in the discussion of Alternative 1 - Ash Recycling Program. Only using the processed materials as road base at the Puente Hills landfill is identified as an end use. The discussion should include if this use is experimental or a pilot program, if there are institutional barriers, impediments, or restrictions to its use, and identification of other facilities where this ash-brick has been used.

58 On page 6-12, one of the monitoring tasks is to record the "products" made and sold from the ash processing. The end uses are not clearly explained throughout the Special Waste Component, especially in the discussion of the end uses for the ash. Please indicate what products are to be monitored.

59 **Page 6-12, Table 6-3:**

This table includes the capital and annual costs for the Special Waste programs. This table does not show costs for all the selected programs nor does it include projected costs for the development or design of the selected programs. Please revise the table to include these items.

60 **Page 6-12, Monitoring and Evaluation of Programs:**

This section of the Special Waste Component does not identify the responsible party for monitoring nor for evaluating the effectiveness of the chosen programs. Additionally, the City will need to develop a mechanism to verify any information received.

61 **Page 6-13, Contingency Measures:**

None of the steps identify actual contingencies. What programs or plans would the City propose to initiate if the diversions lagged or failed, or if the programs were ineffective? This is required by CCR Section 18740(d)(5). Step 3 only indicates that something would be done for ash diversion.

EDUCATION and PUBLIC INFORMATION COMPONENT (Section 7)

62 **Page 7-8, Alternative 7 - SRR Element Representative Training Program:**

The second paragraph of this section states that, in the medium-term, the representatives would assist in "distributing and implementing" additional diversion programs. Please explain how the representatives will distribute and implement programs.

Page 7-11, Table 7-4:

53 This table includes the capital and annual costs for the Education and Public Information programs. This table does not show costs for all the selected programs nor does it include projected costs for the development or design of the selected programs. Please revise the table to include these items.

Page 7-12, Responsible Parties:

54 The Public Information Office is the identified responsible party. What relationship does the CDD have with the PIO? Does the CDD have ultimate responsibility for all program implementation?

Page 7-12, Contingency Measures:

55 The second paragraph of the component introduction, page 7-1, states that the City plans to coordinate its efforts with the other cities in the Southeast Group. This is commendable from a cost-benefit and regional cooperative aspect, but what will the City do if the consortium effort doesn't happen in the City's planned schedule, or if the combined effort doesn't happen at all?

DISPOSAL FACILITY CAPACITY COMPONENT (Section 8)

Page 8-1, Existing Permitted Solid Waste Disposal Facilities:

56 This component of the SRRE is to explain the City of Commerce's existing solid waste disposal facility use. The CREF is the only facility identified as used by the City. Are all wastes generated within Commerce transformed at the CREF? Are there any transfer stations in Commerce?

57 CCR Section 18744 (b) requires the jurisdiction to identify disposal needs projections for a 15-year period. Within CCR Section 18744 (b) there is an equation for calculating disposal capacity needs. "E" of that formula is the identification of the amount of solid waste a jurisdiction exports through interjurisdictional agreements to another jurisdiction for ultimate disposal or transformation. Evidently the City of Commerce has no such agreements.

58 CCR Section 18744 (c)(3) requires this component to identify any plans the City may have to export wastes from its jurisdiction, and to identify the additional capacity needed in the City's export agreements. Tables 8-1 and 8-2, on pages 8-4 and 8-5 respectively, show the amount of solid waste exported by Commerce, and subtracts that amount from the remaining disposal capacity needed. In the equation for determining additional capacity needs, the correct figure for "E" (solid Waste Exported) should be "0" because the City has no export agreements with the receiving jurisdictions.

59 In the revised SRRE please: revise the disposal capacity projections, based on correcting the equation as indicated above; identify all the solid waste facilities currently used for disposal of the City of Commerce's solid wastes; include information on the volume of solid waste to be exported by landfill, for the short-term and medium-term planning periods; and, discuss disposal contingencies/plans the City would explore.

70 Considering the changing landfill scenario in the Los Angeles basin, Commerce should plan for export of their waste to other solid waste management facilities.

FUNDING COMPONENT (Section 9)

11 Will the implementation of the SRRE programs place an undue hardship on the community, or otherwise interfere with its abilities to repay the CREF bonds?

2 To allow a thorough evaluation, please identify all program costs and revenue sources for planning, development, and implementation of all programs, by program, at least for the short-term planning implementation period (CCR Section 18746).

Staff suggests that the SRRE:

1. identify the current financing structure.
2. identify all program costs and revenue sources for each program, not just program type, including planning and development.
3. address the ability of preferred funding mechanisms to accommodate changing economic conditions, an evaluation of the consequences, and the time required to implement the alternative.
4. demonstrate sufficient flexibility in the financing structure to allow for unexpected developments.
5. identify the cost estimates for the implementation of the component programs in the short-term planning period (Tables 9-1 and 9-2 are only for 1991 and 1992).
6. include documentation with future cost estimates.
7. document the local jurisdiction's anticipated revenue streams.
8. identify revenue streams that support the component programs.
9. identify and discuss sources of contingency funding.

PLAN INTEGRATION COMPONENT (Section 10)

3 Please explain how Commerce has integrated the components to maximize use of all feasible source reduction and recycling options. Include an explanation on how components jointly achieve diversion mandates and how priorities between components was determined. [CCR Section 18784(a)(2)]

4 Please submit a schedule which includes all implementation tasks for new or expanded programs by program, through the short-term planning period. Include a descriptive title for each task, entity implementing task, start and milestone dates, and a schedule for funding source availability. [CCR Section 18784(b)]

5 Will the CDD be the overall coordinator for monitoring the implementation schedules for all the programs? Which agency will be responsible for determining priorities between the component programs? No entity was identified.

0 Pages 10-6 through 10-15, Tables 10-2 and 10-3:

Please add a column to these tables indicating the completion date for each task. Also include identification when the City will renew its contract with the CREF.

CITY OF COMMERCE RESPONSE TO CIWMB COMMENTS

Note: Responses below were prepared in response to the CIWMB comments, letter dated October 18, 1991; response numbers correspond to the numbers in the left margin of the comment document.

GENERAL COMMENTS

1. The required alternatives in the Source Reduction, Recycling, and Composting components were each evaluated using the 18 criteria defined in Appendix A. Appendix A provides basic information about the result (high, medium, or low result), while a summary table in Appendix D provides additional discussion for each alternative. Further, each alternative selected in Sections 3.4, 4.4, and 5.4 identifies the rationale for selection.
2. Table 4-2 has been added to the Recycling Component of the SRR element to provide program specific data on existing conditions so that programs can be assessed in terms of effectiveness, and to evaluate the appropriate course of action.
3. The City will undertake standard type surveys and questionnaires to help quantify source reduction efforts. These approaches were identified in Section 2 of the SRR element.
4. Contingency plans are provided in Sections 4.6.3.4 and 5.6.3.4. in case envisioned hauler or processor roles cannot be fulfilled.
5. The City's green waste program involves transferring materials to Puente Hills landfill, which according to the CIWMB is permitted to "...use green waste as cover, under controlled conditions, to meet performance standards." It does not appear that the program is ineligible to count toward diversion goals, however, the City will only use this alternative as a contingency or potential alternative for the medium term. The Recycling Component has been modified to address this issue.
6. The City of Commerce is committed to achieving the objectives stated in the City's Source Reduction and Recycling element.

Regarding this, the City Administrator has assigned the Community Development Department (CDD) the responsibility for coordinating the overall efforts of the various departments involved with the implementation of the selected SRR element program alternatives. In this capacity, the CDD will ensure the proper monitoring and evaluation of the required component tasks, as well as accurate progress reporting of the composite effort.

7. Comment noted.
8. The required environmental documentation will be submitted to the State Clearinghouse as a separate document.

SPECIFIC COMMENTS

9. As required by Section 18722(i), Section 2.2.1, "Solid Waste Disposal Quantities," lists all permitted transfer stations, solid waste transformation facilities, and solid waste disposal facilities used by the City of Commerce.
10. Inert solids, scrape metals, and white goods generated in the City of Commerce were normally disposed as of January 1, 1990. Disposal composition Tables 2-10, 2-11, and 2-12 provide the documentation for their presence in the disposal waste stream and qualify these materials for diversion credit.
11. Street sweepings generated in the City are collected by a licensed contractor and disposed in a permitted solid waste landfill along with the rest of the City's mixed municipal solid waste. For this initial study, the City sees no need to classify street sweepings as a special waste or a hazardous waste. The City will evaluate and monitor the need to address street sweepings in future solid waste generation studies.
12. The allocation of self-haul waste was distributed equally to commercial and residential sources based on the consultant's previous experience in waste characterization and MRF feasibility studies.
13. To take advantage of commonalities with other cities in the Working Group, the cities were organized into different residential, commercial, and industrial groupings for the purposes of characterizing each city's waste. In conjunction with local haulers and transfer station operators, refuse trucks were selected from

each grouping which would be representative of the group. Trucks were selected from residential, commercial, and industrial routes. Each hauler was given a day and time at which to deliver their loads to the sampling location. The selection of the day and time were arbitrarily chosen by the consultant.

14. The random sampling method used to select the main 300-400 pound sample consisted of the following: 1) the load was deposited on the tipping floor, 2) the loader operator mixed the refuse, 3) a sample was taken from the approximate middle of the mixed load, 4) the load was transferred to the sorting table, and 5) the load was sorted. No 200-pound sub-sample was taken from the 300-400 pound sample. The reference to this sub-sample has been deleted from the text.
15. The household diversion telephone survey was randomized in the following way: 1) a phone book containing phone numbers for the City was selected, 2) a random numbers table was used to randomly select a page in the phone book, 3) a random numbers table was used to randomly select a phone number from the page. The random selection of phone numbers assured that the sampling was representative.
16. The best readily available and applicable data was used to make estimates of the quantity of household items donated to thrift shops, etc., as required by CCR Section 18734.2. This did not include making adjustments to compensate for those types of items which would ultimately be discarded as unsalable by thrift shops since this data was not available. Future SWGS's will attempt to obtain this data.
17. The best readily available and applicable data was used to take the severity of the repairs made to major appliances into account as required by CCR Section 18734.2. The only appliances counted towards diversion were those which were repaired after they have exceeded the average life expectancy of the appliances as defined by the manufacturer of the appliance.
18. A complete list of the weight and average life expectancies of these appliances can be found in 2.3.2, "Appliance Repair."
19. The category "Incineration" has been deleted from the solid waste generation projections for clarity.

20. The category "Incineration" has been deleted from the solid waste generation projections for clarity.

Source Reduction Component

21. The Source Reduction Component has been modified to reflect the requirements of the PRC.

Recycling Component

22. Table 4-2, which has been revised, provides information on established recycling programs in the City that in effect, represent jurisdiction-specific programs. With respect to the voluntary status of commercial and industrial sector programs, all programs proceed on a voluntary for-profit basis.
23. Table 4-2 has been modified to identify materials recycled by the program. It is noted that some wood waste has been recycled as fuel; this material is not counted in the short term toward the diversion target. All materials are recycled in ways that conform to CIWMB regulations governing documentation of recycling activities.
24. As required by CCR Sections 18733.2 and 18735.2, the SRR element Section 4.2.1 describes existing programs. However, Table 4-2 has been modified to accurately identify materials recycled by program type.
25. Table 4-6 contains the tasks for the expansion of the existing programs, including target start and completion dates.
26. Section 4.4 provides the information required by CCR Section 18733.4. The estimate of the anticipated diversion by waste type and program, and the percentage each program contributes towards meeting the diversion goals is found in Appendix D-2 and Table 4-5.
27. The City's green waste program involves transferring materials to the Puente Hills landfill which, according to the CIWMB, is permitted to "...use green waste as cover, under controlled conditions, to meet performance standards." It does not appear that the program is ineligible for credit toward diversion goals. However, at the present time, the City plans on relying primarily on United Pacific Corporation (UPC) in Santa Fe Springs for handling and processing their green waste. The alternative cover project will

be utilized by the City as a contingency alternative in the short term and as a selected alternative in the medium term pending changes in the legislation or activities at UPC. The Recycling Component has been modified to incorporate this change.

28. The referenced facility, UPC, does not use sludge in its composting activities.
29. The discussion in Section 4.4.3.4 states that "There is a developing market for plastics..." The discussion does not indicate that there is no market or that existing markets for paper, glass, and metals are depressed. Rather, these markets are reliable for the foreseeable future in the LA area. Further, the discussion does indicate that the City will monitor the situation, and that the City will undertake market development activities if necessary.
30. Yard wastes are to be diverted to UPC as the primary means for diversion. The City will also purchase compost, mulch, and other compost products from UPC. The County Sanitation Districts' program will be used as a contingency alternative. The Recycling Component has been modified to clarify this issue.
31. The comment expresses disagreement with use of what the City feels are appropriate words. Since a program is selected, there may be a need to identify the full extent and nature of the effort. Implementation is not necessarily a simple matter of start-up. There may be institutional or technical issues. This is the rationale for "review", "assess", and "evaluate." No changes have been made to the text.
32. Table 4-7 addresses all the selected programs for which costs are known. Also, there is a cost element identified for program development and design.
33. As indicated in Section 4.6, the CDD is responsible for the overall program development which infers integration of results, since there is no other entity to perform this. The City will be considering various mechanisms of verifying information received from generators and haulers. Additional information pertaining to the selection of a mechanism has been added to Section 4.6.2.
34. The City has stated that it will review programs on an annual basis for development of reports to the County and State. This is the

trigger by which a decision is made to implement a contingency. This information has been added to Section 4.6.3.4.

Composting Component

35. No existing programs were identified therefore, no discussion was inserted concerning these activities. Although there are no known market activities or other economic activities regarding compost products within the City of Commerce other than the diversion of the City's own green waste to the UPC facility, the City will be assessing the potential for these activities through the distribution of a fact-finding questionnaire which has been attached to the annual business license renewals. Additionally, the City plans to participate in the California Integrated Waste Management Board's CALMAX, and will actively promote this program with the local businesses. In addition, the City plans to purchase compost products from UPC and to develop the governmental procurement practices to the maximum extent possible.
36. Only documented diversion activities are reported as required by the CIWMB. There are possibly other programs but they were not documented. Therefore, the local tree service is the only reported activity. Again, any reported materials for the City are documented as originating from City sources, or they would not have been reported.
37. The yard waste composting program is specifically identified in Appendix E. There is no intent to confuse offsite composting of yard wastes with backyard composting which is covered under source reduction. Rather, the term yard waste composting simply refers to the type of material to be composted by a private sector facility in another jurisdiction.
38. This relates to the notion of available materials and competition among several alternatives. It is assumed that source reduction and recycling activities have reduced the available yard waste so that the estimated diversion by 2000 in composting yields at least 50% of the then available yard waste. This reflects the anticipated priority as established by the CIWMB.
39. Various "supportive" alternatives are listed as tasks to support the technological alternatives since the latter actually divert materials.

40. Table 5-7 states that the cost provided include all alternatives. There is also a cost element entitled Program Development which includes design and implementation of the programs.
41. There is no discrepancy related to loose volumes of material. There is a significant difference in preprocessing versus composting. It is only a similarity in number that exists.
42. See response to comment 40.
43. As part of the City's monitoring and evaluation program, all reporting mechanisms will be developed. These mechanisms will include information about the actual diversion activity, quantity of material diverted by program, and the end use for that material. It should be noted that the tree service is already supplying information to the City.
44. The responsible entity has been added to the text in Section 5.6.3.2.
45. The text indicates that the CDD will be responsible for program management. This includes generating and/or receiving all reports. As noted earlier, the City will be developing a verification mechanism. Information regarding the mechanism has been added to Section 5.6.2.

Special Waste Component

46. The City of Commerce does not own or operate a sewage treatment facility. The City is a member of the Sanitation Districts of Los Angeles County which operates a regional sewage collection, treatment, and disposal system in accordance with all required permits, standards, and regulations. This information has been added to Section 6.2.
47. As required by CCR Section 18733.1, a discussion of other regulatory agency requirements has been added to Section 6.2. The types of waste to be diverted and projected quantities are discussed under each alternative in the paragraph entitled "Effectiveness in Reducing Waste Quantity."
48. The references to tons of ash vary depending upon the frame of reference; page 2-49 reflects the amount of ash projected to be generated in 1991; Tables 2-12 and 2-18 reflect generation rates in

1990; Table 6-1 shows the projected diversion rates for 1995 and 2000 based on the projected ash generation rate for these years.

49. Building roads at the Puente Hills Landfill is a continuous process and requires a constant stream of construction materials, such as treated ash. Since ash constitutes only 10% of the daily requirement for road base materials, no foreseeable decline in the demand for the ash is anticipated during the life of the facility.

The current Conditional Use Permit (CUP) for the landfill will expire in 1993. The operator is therefore applying for an extension of the CUP, an expansion of the facility, and a revised solid waste facility permit. If approved, this permit will be extended for another 20 years. The treated ash will be used as road subbase material throughout the active life of the facility, as well during the post-closure maintenance period.

Since the ash makes up only 10% of the demand for road base materials and is totally consumed as it becomes available, there is no need for a contingency plan regarding this material. For this reason, the City has not investigated the use of this material as roadbase outside the Puente Hills Landfill.

50. A SWFP is not required for the use of the ash. There are no existing reuse criteria for treated ash. Any reuse of this material at a permitted landfill will be under the oversight of the Regional Water Quality Control Board (RWQCB), and in accordance with specific waste discharge requirements.
51. If the ash is reused at the landfill, the net cost increase to the CREF will be zero. There are two reasons for this: 1) The cost of ash treatment for the operator of the CREF, who is also the operator of the landfill, is \$17 per ton, including debt service, O/M, and treatment chemicals, 2) the operator of the landfill will no longer charge themselves the current rate of \$17 per ton to dispose of the ash. Therefore, without the tipping fee charge, the net additional cost to the operator for treating the ash is zero dollars.

Additionally, the operator will directly save one dollar for every ton of ash used at the facility because there will not be a need to purchase asphalt which costs one dollar per ton.

52. Comment noted.

53. This suggestion may be incorporated during the medium-term planning period.

54. Although C/D material is recycled, it is being addressed as a special waste by the City because it is often separated and handled differently from other waste streams. References to C/D materials, as well as tires, have been deleted from the Recycling Component.

The end uses include construction activities, such as building and road base construction. This information has been added to Section 6.3.3. Also, it should be noted that the City is aware that not all C/D materials can be recycled. It is the City's intent to aid this program in continuing to define new and potential markets for these materials.

55. Both numbers referenced are incorrect; both have been revised (see Section 6.3.3 and Table 6-1).

56. Although the numbers in the text match those in the table, all of the figures have been modified to incorporate the change in the projected used tire diversions.

57. Section 6.4.2 has been modified to clarify that the end use of the processed ash will be road subbase material.

In regards to whether the program is experimental or a pilot program, it is neither. The ash treatment project has already undergone extensive laboratory research, as well as a thorough demonstration study to obtain full-scale ash treatment plant design data and operational characteristics. During the demonstration program, the treated ash was used as subbase for a test section of the road at the landfill. This application proved successful and the treated ash demonstrated better performance overall than asphalt. It has been evaluated at the landfill to the point where it has been determined to be a suitable material for use as road subbase.

No institutional barriers are anticipated given that use of the ash mixture will be under the oversight of the RWQCB at the landfill, and will be utilized in accordance with the landfill's permit requirements including WDR's. Further, there are no reuse criteria for the use of treated ash in this application. Operationally, the only requirement is the need for a suitable location and permission from the RWQCB to stockpile the ash at the landfill. This condition will be stipulated in the landfill's WDRs. In response to the question

regarding other facilities using ash-brick, treated and untreated ash is used in a variety of applications outside of California. These uses include: building bricks and blocks, landfill cover and landfill gas venting trenches, as a crushed asphalt for road subbase, and for constructing sea reefs.

58. The end use to be monitored is a crushed asphalt substitute consisting of processed ash and concrete for landfill road subbase application. This information has been added to Section 6.6.
59. Table 6-3 has been modified to reflect the costs for design and development of the selected alternatives.
60. The responsible party, the CDD, has been identified in Section 6.6 and has the need for development of verification mechanisms.
61. Additional information pertaining to the steps the City will take if the selected alternatives do not achieve the goals has been added to Section 6.7.1.

Education and Public Information Component

62. The representatives will distribute and implement programs through the monthly business newsletter, by making presentations at monthly Industrial Council and Chamber of Commerce meetings and luncheons, by visiting employers throughout the City and making presentations to their management and staff, by offering a telephone advisory service, by participating in a speakers bureau, by participation in the production of video training materials to be used during their presentations, or to be loaned to companies who wish to view them at their management or employee meetings, by working with the local waste haulers and using their information distribution systems, by participating in business round table discussions, by attendance at the annual business exposition, and by participating in a networking organization coordinated by the City.
63. Table 7-4 shows a summary cost for all alternatives. A cost element for design and development is provided.
64. The Community Development Department is responsible for the overall program implementation and monitoring. The CDD will coordinate the efforts of the Public Information Office, the Finance

Department, and any other City departments involved in implementing SRR element programs.

65. The Southeast Area Integrated Waste Management Working Group exists at present and represents practical application of cost and program development sharing. The Working Group will continue to function after the SRR elements are completed. If the Working Group dissolves, the City will endeavor to identify other groups through which the development and implementation of the education and public information program is facilitated. In addition, the City has a large Public Information Office (7.5 staff members) and is capable of conducting an effective public education campaign independent from those activities that may be conducted in cooperation with other cities. The City's goal, however, is to work with other cities in order to maximize all efforts.

Disposal Facility Capacity Component

66. An ordinance of the City of Commerce designates the CREF as the disposal facility for all or certain portions of all refuse collected within the City; and all refuse haulers licensed by the City are thereby directed to dispose of all refuse at the plant. However, some waste materials which cannot be transformed, recycled, or eliminated from the waste stream are transported by the haulers to Puente Hills for landfill disposal. There are no transfer stations in Commerce.
67. Tables 8-1 and 8-2 have been revised to reflect only the ash residues which the City has an agreement for disposal with the Puente Hills Landfill in the export (E) column. The City will work to secure necessary export agreements with receiving jurisdictions. Also, the City is in support of the Los Angeles County Solid Waste Action Plan adopted by the Board of Supervisors on April 5, 1988, and the Sanitation Districts of Los Angeles County in May of 1988. This information has been added to Section 8.5.
68. See responses to Comment Nos. 66 and 67.
69. Tables 8-1 and 8-2 have been revised as required and information pertaining to the City's contingency plan is included in Section 8.5.
70. Comment noted.

Funding Component

71. Should the amount of refuse being delivered to the CREF fall below the level necessary for the proper operation of the plant due to the implementation of AB 939, the City will review and adjust the SRR element programs to compensate for this problem.
72. The Funding Component has been modified to incorporate the requested information that is currently available.

Plan Integration Component

73. The City evaluated all of the possible source reduction and recycling alternatives that appeared to be feasible for implementation within the City. The selected alternatives, as described in the SRR element, will provide the base for achieving the required diversion mandates. The City will maximize the use of source reduction and recycling activities through active recordkeeping and monitoring (see Section 3.6 of Source Reduction and Section 4.6 of Recycling).

Priorities between the components were determined by the City based on the programs currently in place and those which would achieve the greatest amount of diversion while still being cost efficient. Section 10.2 was modified to incorporate this concept.

74. The integrated schedules include all of the implementation tasks as identified in each component by program through the short-term planning period. Each task's title corresponds to the actual activity, the entity responsible is identified and completion dates have been added. A schedule for funding source availability has also been added into the tables.
75. The CDD will be the overall coordinator for monitoring the implementation schedules and for determining priorities between component programs. This information was added to Section 10.5.
76. The requested information has been added to Table 10-2.

10/21/91

LOS ANGELES COUNTY INTEGRATED WASTE MANAGEMENT TASK FORCE
PLAN REVIEW SUBCOMMITTEE
SOURCE REDUCTION AND RECYCLING ELEMENT REVIEW

CITY OF COMMERCE

PREPARED BY EMCON ASSOCIATES

1	GOALS & OBJECTIVES	Y	N	COMMENTS
		☒	☐	
	- Realistic?	☒	☐	
	- Impact on neighboring jurisdiction?	☒	☐	
	- Promote cooperative management?	☒	☐	
2	WASTE CHARACTERIZATION			AB 939 target diversion percentages stated in the 15-year waste generation projections are inconsistent with the short-term and medium-term diversion quantities reported in the executive summary.
		☒	☐	
	- Is methodology consistent with requirements?	☒	☐	
	- Data presented in usable format?	☒	☐	
	- Are disposal/diversion quantities reasonable?	☒	☐	
3	SOURCE REDUCTION			Materials that could be targeted for source reduction are, instead, planned for transformation at the Commerce Refuse-To-Energy Facility. Diversion is not reported by diversion program for each waste type.
		☒	☐	
	- Are regional concerns considered?	☒	☐	
	- Are diversion tracked?	☒	☐	
4	RECYCLING			The City proposes to site MRFs within the jurisdiction. The City also proposes a market development zone.
		☒	☐	
	- Are regional concerns considered?	☒	☐	
	- Are diversions tracked?	☒	☐	
	- Are facilities required?	☒	☐	
5	COMPOSTING			Diversion is not reported by diversion program for each waste type. The City identifies UPC in Santa Fe Springs for preprocessing.
		☒	☐	
	- Are regional concerns considered?	☒	☐	
	- Are diversions tracked?	☒	☐	
	- Are facilities required?	☒	☐	
6	DISPOSAL CAPACITY			The City has no plans to secure waste export agreements. Waste exported cannot be counted in Tables 8-1 and 8-2. Generation and diversion quantities presented in Tables 8-1 and 8-2 are not consistent with quantities stated in Figure 2-1. Transformation reduction quantities reported are incorrectly calculated.
		☒	☐	
	- Are existing facilities identified correctly?	☒	☐	
	- Are 15-year needs identified?	☒	☐	
	- Agreements for exporting to other jurisdictions?	☐	☒	
	- Are strategies identified for 15-year disposal needs?	☐	☒	
7	FUNDING			Identifies City costs only. No private or business sector costs identified.
		☒	☐	
	- Are alternatives analyzed?	☒	☐	
	- Are program implementation costs identified?	☒	☐	
	- Are funding sources selected?	☒	☐	
8	CEQA			No CEQA documentation provided.
		☐	☐	
	- Are cumulative impacts identified?	☐	☐	
	- Are mitigation measures identified?	☐	☐	

CITY PROGRAM SELECTION

PROGRAMS	Implementation		Estimated Diversion %			Realistic	
	Short	Medium	1990	1995	2000	Y	N
9 SOURCE REDUCTION			0.1*	0.1	0.1	X	—
Rate Modifications			*0.004% of this figure is white goods.				
1) Disposal Fee Modification	—	—					
2) Quantity Based User Fee	—	—					
Economic Incentives							
3) Loans, Grants, Refunds	—	—					
4) Deposits, Refunds, Rebates	—	—					
5) Reduced Business License Fee	—	—					
Technical Assistance							
6) Waste Evaluation	—	—					
7) Backyard Composting	—	—					
8) Education/Awareness	X	X					
9) Public Recognition	—	—					
10) Non-Procurement	—	—					
Regulatory							
11) Procurement Ordinances	X	X					
12) Zoning Incentives	—	—					
13) Product Bans	—	—					
10 RECYCLING			18.0%*	22.5	40.4	X	—
Material Separation			*0.05% of this figure is tires. 4.2% of this figure is inert material.				
1) Single-Family Curbside	X	X					
2) Multi-Family	X	X					
3) Commercial/Industrial	X	X					
4) Drop-Off Centers	—	—					
5) Buy-back Centers	—	—					
6) Total Waste MRF	X	X					
7) Green Waste Cover Project	X	X					
8) Procurement Ordinances	X	X					
9) Market Development Zone	X	X					
11 COMPOSTING			0.1	1.3	1.3	X	—
1) Regional Facility	X	X					
2) Self-Haul Drop-Off	X	X					
3) Decentralized Preprocessing	X	X					
12 OTHER WASTES			0.0	24.5	22.6	X	—
1) Tire Repair*	X	X	*It is not clear why the existing diversion for tires, inert materials and white goods are counted toward source reduction and recycling, while future diversion of these materials (under the same programs) are counted toward special/other waste diversion goals. Clarify the details of the agreement between the CREA and the CREF regarding the ash recycling program.				
2) Demolition Wastes Recycling*	X	X					
3) Ash Recycling	X	X					
4) White Goods Repair*	X	X					
TOTAL ESTIMATED DIVERSION %			18.2	48.4	64.4	X	—

NOTES:

CREA Commerce Refuse to Energy Facility (Owners, Sanitation Districts 2 and Commerce)

CREF Commerce Refuse to Energy Authority (JPA 50 years)

JT:lz

LZ(7)/COMM COMM1

CITY OF COMMERCE

RESPONSE TO LOCAL TASK FORCE COMMENTS

Note: Responses below were prepared in response to the LTF comments, checklist dated October 21, 1991; response numbers correspond to the numbers in the left margin of the comment document.

1. No comment response required.
2. AB 939 target diversion percentages stated in the 15-year waste generation projections have been recalculated so that they are consistent with the short-term and medium-term diversion quantities reported in the executive summary.
3. The comment that materials are destined for incineration at the CREF is noted.

Diversion is reported by program and material type in the component and in Appendix C-2.
4. Comment noted.
5. Diversion is reported by material type and program as there is only one program and only one type of material targeted.
6. The City has an agreement with the County Sanitation Districts for acceptance of the CREF ash at the Puente Hills Landfill. The City will endeavor to secure export agreements for the other wastes being exported.

Tables 8-1 and 8-2 have been modified to reflect the change in the export column as well as to be consistent with quantities presented in Section 2.
7. Information pertaining to which costs are attributed to the private sector has been added to the Funding Component.
8. The required CEQA documentation has been forwarded to the State Clearinghouse by the City.
9. Discussions regarding white goods, tires and inert materials have been deleted from the "Existing Conditions" sections for the Source

Reduction and Recycling Components. This information is presented in the Special Waste Component.

10. See response above.
11. No response necessary.
12. White goods, tires, and inert materials are presented in the Special Waste Component because they require special handling. Existing programs, however, can be defined as source reduction or recycling. References to these materials have been moved to the Special Waste Component.

The CREF is operated by the Commerce Refuse-to-Energy Authority, which was created by a joint agreement between the City of Commerce and the County Sanitation Districts of Los Angeles County.

CALIFORNIA INTEGRATED WASTE MANAGEMENT BOARD

1020 Ninth Street, Suite 100
Sacramento, California 95814



October 28, 1991

Mr. Raymond C. Ramirez
Assistant Director of Community Services
City of Commerce
2535 Commerce Way
Commerce, CA 90040

RE: Board Comments on the City of Commerce's
Preliminary Draft Household Hazardous Waste Element

Dear Mr. Rameriz:

California Integrated Waste Management Board (Board) staff have reviewed the City of Commerce's Draft Household Hazardous Waste Element (HHWE) for compliance with Chapter 9, Title 14, Article 6.3 of the California Code of Regulations (CCR), the Planning Guidelines and Procedures for Preparing and Revising Countywide Integrated Waste Management Plans. Regulations for the HHWE were recently developed and released for public review. A copy of these final regulations is attached for your reference and use in revising the HHW Element accordingly. Staff realizes that the HHWE may have been prepared without the benefit of the newest regulations. All regulations cited relate to the latest edition of these draft regulations.

Below are comments applicable to the specific Element section referenced. These comments, and all other comments received by the City of Commerce, should be addressed in the revised HHWE.

Page 8, Load-checking Programs:

1 The Element should include the operating procedures for the loadcheck program, waste handling methods for waste of known and unknown origin, and enforcement actions taken against violators.

Page 17, Effectiveness In Reducing Targeted Materials:

2 The HHWE claims that this alternative would only be effective within a 5 mile radius of the generator. Please provide references that are the basis for this assumption.

Page 18, Estimated Cost Rating:

3 The Element claims that operating costs for a facility operating only one day per week may be as high as \$2,000,000 a year. Please provide the references that are the basis for this cost estimate.

Page 19, Alternative 3 - Mobile HHW Collection:

4 In reference to the County of Los Angeles' mobile collection units visiting 12 sites in a year, will any of these sites be near the City of Commerce? This is especially important considering the previous statement on page 17.

Page 25, End Uses:

5 The draft erroneously states that 7% of spent lead-acid batteries are currently recycled. According to our information the correct figure is 70%.

Mr. Ramirez
October 28, 1991
Page 2

6 **Page 27, Consistency with Local Planning:**

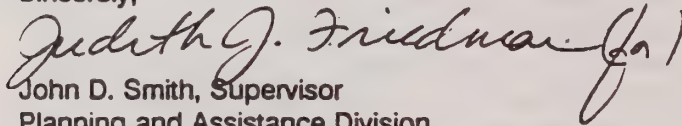
The City should consider non-English speaking aspects of the public information and education programs, based on the demographics of the community.

7 **Page 32, Multijurisdictional HHW Efforts:**

A brief description of the terms for the proposed MOU should be included. The Element should clarify if Los Angeles County's HHW recycling program will be separate from or compatible with other HHW programs, especially those programs already implemented such as oil and paint recycling.

8 In the revised HHWE, please include documentation that the appropriate CEQA documents have been circulated through the State Clearinghouse for agency review. If you have any questions about our comments, please contact me at (916) 255-2319, or Lloyd Dillon of the Division's Local Assistance South Section at (916) 255-2311.

Sincerely,



John D. Smith, Supervisor
Planning and Assistance Division,
Local Planning Branch

Attachment

cc: LA Co. LTF
EMCON Associates

RECEIVED
NOV - 4 1991
EMCON

City of Commerce
Household Hazardous Waste Element
Final Report

Prepared for
City of Commerce

December 1991



Prepared by
EMCON Southwest
3300 North San Fernando Road
Burbank, California 91504
Project F33-01.01

City of Cambridge
Household Hazardous Waste Element
Final Report

Prepared for
City of Cambridge
Division 10



Prepared by
Environmental Protection
Agency
Office of Research and Development
Washington, D.C.

CITY OF COMMERCE
RESPONSE TO CIWMB COMMENTS
HOUSEHOLD HAZARDOUS WASTE ELEMENT (HHWE)

Note: Responses below were prepared in response to the CIWMB comments, letter dated October 28, 1991; response numbers correspond to the CIWMB comment numbers in the left-hand column of comment document.

1. Additional information pertaining to the County's load-checking program has been added to Appendix B of the final HHWE.
2. This statement was based on input from the County DPW, however, Section 5.2.1 has been modified to reflect a possible barrier to effectiveness rather than a definite barrier.
3. This figure was provided by the County DPW based on their evaluation of programs in Orange County.
4. As of this date, a list of locations for the mobile units has not been distributed.
5. The requested modification was made to Section 5.6.9.
6. The public information and education programs will be conducted in Spanish as well as English where necessary.
7. At this time the terms for the proposed MOU are not available.

Clarifying language was added to Section 5.6 and 6.1.1 regarding the fact that the County's recycling programs will be compatible with existing recycling programs.
8. The required CEQA documents have been submitted to the State Clearinghouse by the City under separate cover.

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1 INTRODUCTION

1.1 OVERVIEW OF HOUSEHOLD HAZARDOUS WASTE PROBLEM

Hazardous chemicals are prevalent in modern society, not only in the commercial and industrial sectors, but also in the residential sector. Hazardous substances can be found throughout the home, garage, garden, and hobby shop as constituents in products such as cleaners, paints, pesticides, and glue. Once these hazardous products are no longer needed by the consumer, they become household hazardous waste (HHW). Improper disposal of HHW can pose a risk to human health and the environment. Thus, HHW requires special handling. This element addresses HHW for the residential consumer.

A substance is classified as a hazardous waste by the State Department of Health Services (DHS), California Code of Regulations (CCR) Title 22, if it demonstrates any of the following characteristics:

- ignitability—flammable (e.g., lighter fluid, and spot and paint removers)
- corrosivity—eats away materials and can destroy human and animal tissue by chemical reaction (e.g., oven and toilet bowl cleaners)
- reactivity—creates an explosion or produces deadly vapors (e.g., bleach mixed with ammonia-based cleaners)
- toxicity—capable of producing injury, illness, or damage to humans, domestic livestock, or wildlife through ingestion, inhalation, or absorption through any body surface (e.g., rat poison, cleaning fluids, pesticides, and bleach)

The City of Commerce is currently participating in the development and implementation of a Countywide HHW management effort to avoid the potential hazards associated with the improper disposal of hazardous waste.

1.2 HHW MANAGEMENT IN LOS ANGELES COUNTY

On April 26, 1988, the Los Angeles County Board of Supervisors directed County staff to work with the incorporated cities in the County to develop a pilot program to provide HHW collection service to residents throughout the County. The result was a series of collection events located at various sites in the County.

Based on the positive results of the pilot program, a permanent County-wide program was recommended for development. Conducted by the County of Los Angeles through the Department of Public Works (DPW) and the County Sanitation Districts (CSD), the program will consist of collection services and public education programs for County residents.

The County plans to develop a mobile collection program for HHW. The program will consist initially of two mobile collection units, each operating approximately 48 days each year. One unit will operate at collection sites located primarily in the City of Los Angeles because a large proportion of County residents live in or near this City. The other unit will circulate throughout the County. As the program progresses, the County will determine whether additional mobile units are necessary to provide adequate access to all the residents in the County.

The County's effort will also include public education programs whose purpose will be to inform residents of the hazards of HHW and provide direction on reducing and disposing these wastes. These programs will build on education efforts currently undertaken by the County.

The DPW will serve as the lead agency for the administration and implementation of the Countywide program, including both HHW collection and public education. The Countywide program will be monitored by the DPW and CSD to ensure that the residents of the County are given adequate opportunities for the safe disposal of their HHW.

The City of Commerce has agreed to participate in the Countywide HHW efforts to ensure that the HHW generated by City residents is properly disposed.

2 OBJECTIVES

The City selected the following objectives to properly manage HHW generated within the City. The objectives are organized according to the short-term (1991 to 1995) and medium-term (1996 to 2000) planning periods.

2.1 SHORT-TERM PLANNING PERIOD

The following objectives pertain to the short-term planning period:

- Cooperate with the CSD, DPW, and other organizations on the establishment and operation of a Countywide HHW program.
- Reduce the amount of HHW generated within the City by advocating and using products not harmful to the environment.
- Reduce the disposal of HHW in landfills by providing residents with locations for convenient HHW collection services.
- Minimize disposal of collected HHW through waste exchange programs that promote the reuse of certain recyclable materials.
- Initiate public education and information programs addressing HHW in cooperation with the County HHW program and/or other jurisdictional programs.

2.2 MEDIUM-TERM PLANNING PERIOD

The following objectives pertain to the medium-term planning period:

- Recycle HHW to the maximum extent possible.
- Monitor the effectiveness of the short-term actions and, if necessary, reassess the short-term goals.
- Continue cooperation with the County or other organizations on the Countywide HHW program.

- Continue education and public information programs implemented in the short-term planning period.

2.3 TARGETED MATERIALS

All household materials that have the characteristics of hazardous waste (ignitability, toxicity, corrosivity, and/or reactivity), with the exception of radioactive, explosive, ammunition, and infectious wastes are targeted by this plan for source reduction, recycling, or proper disposal.

3 EXISTING CONDITIONS

The County of Los Angeles has taken a regional approach to HHW management. The CSD and DPW provide HHW programs that serve the cities in the County of Los Angeles. These programs include:

- periodic collection events
- education and public information
- load-checking programs at landfills

The City does not provide any additional HHW management programs but will augment the County-sponsored HHW management programs by assisting with local publicity for collection events.

According to the City's solid waste generation analysis, an estimated 65 tons of HHW were generated by the City residents in fiscal year 1989-90. This amount reflects approximately 0.07% of the total waste stream generated by the City residents.

3.1 PERIODIC COLLECTION EVENTS

The City's residents have participated in the County's HHW collection program since its inception in 1988. During 1990, collection events were held at the following locations:

- Rose Bowl, Pasadena (April 28, 1990)
- Veterans Memorial Stadium, Long Beach (May 5, 1990)
- Rockwell International, Palmdale (May 18, 1990)
- County Sanitation District (CSD) Headquarters, Whittier (May 19, 1990)
- College of the Canyons, Santa Clarita (June 15, 1990)
- California Polytechnic University, Pomona (June 16, 1990)
- Hollywood Park, Inglewood (October 20, 1990)

These seven Countywide events served 15,300 households and generated approximately 664 tons (158,000 gallons) of HHW. The

materials collected were either recycled, reused, or transported to a permitted treatment and disposal facility. The materials collected included

- paint: 76,000 gallons
- used oil: 32,000 gallons
- solvent: 8,700 gallons
- batteries: 2,265 units

Of this waste stream, 100% of the batteries and used oil were recycled, as well as 98% of the solvents and 90% of the paints. Much of the solvent and paint waste was shipped for use as alternative fuel at a local cement kiln. Details on the amount and types of wastes collected at these events are included on CIWMB Form 303, provided in Appendix A. Records from a number of the County-sponsored events include a list of the participants by city of origin. City residents participated in the collection event held at CSD Headquarters in Whittier. The quantity of HHW diverted from disposal by residents of the City is estimated to be 42 gallons or 0.18 tons. Some HHW may have been disposed improperly. The HHW category established by the State for waste composition includes discarded HHW containers, which if empty and one gallon or less in capacity, may be legally disposed in municipal solid waste landfills.

Collection events were previously held at the following locations in 1988 as part of the County's pilot program:

- Calabasas Landfill, 26919 Ventura Freeway (August 28, 1988)
- Puente Hills Landfill, Whittier (September 18, 1988)
- Palos Verdes Landfill, Rolling Hills Estates (October 8, 1988)
- South Gate Transfer Station, South Gate (October 30, 1988)
- Spadra Landfill, Walnut (November 20, 1988)

These five events served 1,292 households. The materials collected included:

- used oil: 4,375 gallons
- batteries: 1,390 pounds

- miscellaneous wastes: 288 lab packs

Prior to each round-up day, site-specific fliers were prepared and distributed through news media, homeowners' associations, various agencies, and nonprofit organizations. Upon arrival at the site, individuals were asked questions regarding where they live, how they heard about the program, and how often they would like to see the program repeated. Additionally, those persons having only motor oil were directed to an "express" line to expedite processing. All other wastes were collected by personnel from a licensed hazardous waste contractor and classified according to type. The wastes were then packed in drums and transferred to permitted recycling, treatment, incineration, or disposal facilities for proper management.

At present, the DPW and CSD plan to continue to provide periodic collection services until the future program is developed. City residents can deliver HHW to any of the collection events. The DPW will continue to coordinate and administer the future collection program.

3.2 PUBLIC EDUCATION AND INFORMATION

Public education is an integral part of the Countywide HHW management program, resulting in increased public awareness of proper disposal and source reduction of HHW. The County's existing education and information efforts include the following:

- Distribution of pamphlets, fliers, press releases or other advertisements during the HHW roundup events and upon request to interested individuals. The pamphlets provide information on proper disposal methods for waste oil and paint, as well as nonhazardous substitutes for commonly used hazardous household products.
- Implementation of an HHW/recycling hotline (1-800-552-5218) to answer questions regarding proper use and disposal of HHW. Alternatives to hazardous substances have been provided to interested individuals, and referrals are made to waste-oil and latex-paint collection centers near the caller's place of residence.
- Advertisement of collection events through distribution of fliers in government offices, schools, and community groups, newspaper advertisements, radio

announcements, television talk shows, and postings at local stores.

3.3 LOAD-CHECKING PROGRAM

The objective of a load-checking program is to discourage the improper disposal of prohibited wastes at sanitary landfills. Beginning in 1984, load checking has been required at all Class III landfills and transfer stations in the County. The four landfills under the authority of the CSD implemented load-checking programs in 1983. Details of the load-checking program can be found in Appendix B, "Load Checking Program Requirements."

Approximately 0.5% of all incoming loads (7 out of every 1,500 trucks arriving at the Puente Hills Landfill) are randomly inspected for prohibited wastes. Any loads suspected of containing prohibited wastes are also inspected. The County estimates that approximately 300 to 400 pounds of hazardous waste per landfill per year is collected through the random inspection method. Another 1,100 to 1,200 pounds per year per landfill is collected through inspection of suspect loads. Load-checking procedures are in place at the CSD-operated transfer stations as well.

The majority of prohibited waste discovered through the load-checking program originates from industrial sources. However, hazardous waste generated by industry is usually disposed in large containers that are easier to spot during a load inspection than the small containers of HHW that are typical of the residential waste stream. According to County Sanitation District personnel known violators will be billed for waste disposal or will have the opportunity to retrieve the waste and dispose it on their own.

Although the City does not have a landfill within its jurisdiction, information regarding load-checking procedures are applicable inasmuch as area residents utilize County landfills and transfer stations.

3.4 HHW MANAGEMENT PROGRAMS

Several cities in Los Angeles County have existing waste-oil collection facilities. Fees and quantity limits, if any, vary depending on the facility. The addresses and telephone numbers of the facilities in the County that will accept waste oil are provided in Appendix C.

4 EVALUATION CRITERIA

This section describes the criteria that will be used in Section 5 to evaluate various HHW programs. The "Planning Guidelines and Procedures for Preparing and Revising Countywide Integrated Waste Management Plans," Title 14, California Code of Regulations, Division 7, Chapter 9, Section 18733.3, requires that certain criteria be used in evaluating alternatives for HHW programs. Each criterion has been assigned a scale of high, medium, and low. A high score indicates favorable (or positive) conditions. A low score indicates less favorable (or negative) conditions.

4.1 EFFECTIVENESS IN REDUCING TARGETED MATERIALS

Effectiveness in Reducing Targeted Materials considers the effectiveness of an alternative in reducing the amount of a targeted waste. This criterion evaluates the estimated percentage of the total waste stream that the alternative reduces or diverts. For the purpose of this study, the following criteria were used:

- Low: Very little diversion is expected.
- Medium: A moderate amount of diversion is expected.
- High: A significant amount of diversion is expected.

4.2 ABSENCE OF HAZARDS

Absence of Hazards evaluates the hazards that could be created by implementing the alternative. Hazards could include health risks, injury, fire, or public nuisances.

- Low: Potential hazards are not completely understood, or the alternative increases the potential hazards.
- Medium: Potential hazards are known and controllable although some impacts remain.
- High: There are few or no potential hazards or unmitigated impacts.

4.3 FLEXIBILITY

Flexibility considers the alternative's ability to accommodate changing economic, technological, and social conditions.

- Low: The alternative has a limited ability to respond to changing conditions. Limitations may include inflexible or unpredictable markets for diverted materials or operational limitations.
- Medium: The alternative is anticipated to demonstrate a moderate ability to respond to changing conditions. Significant changes in the program may be required.
- High: The alternative is anticipated to be readily adaptable in meeting changing conditions. No significant changes in the program are necessary.

4.4 IMPLEMENTABILITY

Implementability evaluates the extent to which the alternative can be implemented in the short-term or medium-term planning period.

- Low: Implementation of the alternative could not be completed until after 2000.
- Medium: Implementation of the alternative is anticipated to be completed by 2000.
- High: Implementation of the alternative is anticipated to be completed by 1995.

4.5 FACILITY NEEDS

Facility Needs considers the need for expanding existing facilities or building new facilities to support the implementation of the alternative.

- Low: New facilities must be developed to accommodate implementation of the alternative.
- Medium: Existing facilities must be expanded or altered to accommodate implementation of the alternative.

High: The alternative can be easily integrated into existing facilities.

4.6 CONSISTENCY WITH LOCAL POLICIES

Consistency with Local Policies evaluates the alternative's compatibility with existing local plans, policies, and ordinances.

Low: The alternative would require major changes to existing local plans, policies, or ordinances for implementation.

Medium: The alternative would require minor changes to existing local plans, policies, or ordinances for implementation.

High: There are no existing local plans, policies, or ordinances that would impede the implementation of the alternative.

4.7 ABSENCE OF INSTITUTIONAL BARRIERS

Absence of Institutional Barriers evaluates the extent to which institutional barriers, such as long-term franchise agreements, other contracts, or permit requirements, may impact the implementation of the alternative.

Low: The alternative is affected by existing institutional barriers that are not under the control of the jurisdiction.

Medium: The alternative is affected by existing institutional barriers over which the jurisdiction maintains some control.

High: There are no known existing institutional barriers to the alternative.

4.8 ESTIMATED COST RATING

Estimated Cost Rating evaluates the overall estimated cost of the alternative, including capital costs and operating costs, over the lifetime of the alternative. This may also be represented by a range of costs.

- Low:** The cost to implement the alternative is high compared to other alternatives being considered.
- Medium:** The cost to implement the alternative is considered midrange compared to other alternatives.
- High:** The cost to implement the alternative is low compared to other alternatives.

4.9 END USES

End Uses measures the marketability of the diverted materials.

- Low:** End uses are currently nonexistent or unreliable, though the potential for the development of long-term or medium-term markets may exist.
- Medium:** End uses exist, but are subject to moderate fluctuations. The potential for the development of short-term markets may exist.
- High:** End uses exist and are relatively stable.

5 EVALUATION OF PROGRAM ALTERNATIVES

This section presents an evaluation of alternative HHW programs that can be used by the City to meet its HHW objectives. The following seven alternatives were evaluated:

- Alternative 1 - Periodic HHW collection events
- Alternative 2 - Permanent HHW collection facility
- Alternative 3 - Mobile HHW collection (Countywide program)
- Alternative 4 - Door-to-door HHW collection program
- Alternative 5 - Load-checking program
- Alternative 6 - Recycling program for HHW
- Alternative 7 - Public education and information

This evaluation utilized the criteria presented in Section 4 and is the basis for the HHW programs selected for implementation. The results of the evaluation are summarized in Table 5-1.

Many of these activities are complementary and depend significantly on the implementation of other alternatives or programs. This factor was taken into account in the evaluation process.

5.1 ALTERNATIVE 1 - PERIODIC HHW COLLECTION EVENTS

City residents can participate in HHW collection events sponsored by the CSD and DPW. These periodic collection events are described in Section 3.1, and are currently provided at the sole expense of the CSD and DPW. The City may consider implementation of occasional collection days in the medium-term planning period. However, for the purposes of this evaluation, only the Countywide program is considered.

5.1.1 Effectiveness in Reducing Targeted Materials

Collection events are considered moderately effective at diverting HHW because they offer residents a disposal option for their HHW and result in increased awareness about the dangers of improperly disposing of

Table 5-1
Household Hazardous Waste Alternatives Evaluation Summary

Criteria	Alternatives						
	1 Periodic Collection Events	2 Permanent Facility	3 Mobile Collection	4 Door-to- Door Collection	5 Load- Checking Program	6 Recycling Program	7 Public Education and Information
Effectiveness in Reducing Waste Quantity	Medium	High	High	Low	N/A	High	High
Absence of Hazard	Medium	Medium	Medium	Medium	N/A	Medium	High
Flexibility	Medium	Medium	Medium	High	N/A	High	High
Limited Shift in Waste Type Generation	High	High	High	High	N/A	High	High
Ease of Implementation	High	Medium	High	High	N/A	High	High
Facility Needs	High	Low	Medium	Medium	N/A	Medium	High
Consistency with Local Policies	High	Low	High	Low	N/A	Medium	High
Absence of Institutional Barriers	High	Medium	Medium	Low	N/A	High	High
Estimated Cost	Medium	Low	Low	Low	N/A	High	High
End Uses	Medium	High	Medium	Medium	N/A	High	N/A

hazardous materials. However, because the events are held only periodically, they do not provide residents with an ongoing disposal option, thus limiting their effectiveness.

5.1.2 Absence of Hazards

Potential public health risks and safety hazards associated with periodic collection events include spills, fires, leaks, or explosions resulting from improper collection, storage, handling, or transport of hazardous materials. However, proper equipment, operation, and health and safety training of event workers minimize these potential hazards. There have been no reported accidents at previous collection events sponsored by the County, so the risk is considered controllable.

5.1.3 Flexibility

Although certain operational limitations may limit the flexibility of a specific collection event, the overall program can be very flexible. Increased participation can be encouraged by scheduling additional collection events and/or increasing the number of personnel available to handle the incoming wastes. This assumes that the number of events and personnel is not fixed on an annual basis. Collection events can be somewhat flexible in affording recycling options, such as assimilation of larger volumes of material, or the establishment of waste exchange programs. However, contingencies would need to be incorporated into the program, e.g., collection locations with sizable storage areas, selection of contractors with the ability to accumulate and recycle collected materials.

5.1.4 Implementability

The program has been in operation since 1988 and will continue to operate until the DPW develops an alternative collection program.

5.1.5 Facility Needs

Collection events do not require expansion or development of permanent facilities.

5.1.6 Consistency with Local Policies

Encouraging residents to participate in collection events is consistent with local policies.

5.1.7 Absence of Institutional Barriers

There are no institutional barriers to the City's participation in these events.

5.1.8 Estimated Cost Rating

The average cost to the County per participating household for the previous collection events was approximately \$173 per car, based on the average cost for the five events held by the CSD and DPW during 1990. This cost includes contractor costs for labor, equipment, materials, and disposal. The overall cost for these types of events is approximately \$400,000 per event.

5.1.9 End Uses

Collection events divert latex paint, oil, and batteries from the waste stream through recycling. Nonrecyclable HHW collected through the events is either properly disposed at a permitted hazardous waste facility or incinerated. Ongoing waste exchanges, where residents can obtain usable products that otherwise would be discarded, are not feasible at collection events due to the events' short duration and transient nature.

5.2 ALTERNATIVE 2 - PERMANENT COLLECTION FACILITY

A permanent collection facility provides a fixed location for accepting HHW delivered by residents. Permanent facilities are generally open year-round and are operated on a regional basis. They are usually sited to allow access from major population centers and can be designed to incorporate recycling and source reduction opportunities. Recycling may be accomplished by accumulating volumes of materials such as used oil, latex paint, or batteries for reprocessing into new materials. Source reduction opportunities include the establishment of a waste exchange program. In fact, the DHS and CIWMB encourage the exchange of materials as a means of waste reduction, as long as safeguards are

maintained. Such a program, which can be coordinated through the State Clearinghouse or other means finds users for otherwise discarded wastes.

5.2.1 Effectiveness in Reducing Targeted Materials

A permanent facility is effective in reducing the amount of HHW that is disposed in landfills by offering residents ongoing disposal, recycling, and source reduction options. However, this alternative may be less effective if such a facility is not within a 5-mile radius of the generator; this assumes that most residents will not commute more than 15-20 minutes to a facility.

Implementing a waste exchange and recycling program at a permanent facility should further reduce the quantity of HHW requiring disposal.

5.2.2 Absence of Hazards

Potential public health risks and safety hazards associated with a permanent facility include spills, fires, leaks, or explosions resulting from improper collection, storage, handling, or transport of hazardous materials. However, proper facility design, equipment, operation, and health and safety training for facility workers can minimize potential hazards.

5.2.3 Flexibility

The flexibility of a permanent facility is a function of the community size, facility location, and number of sites. The facility can be flexible because it can accommodate changing conditions by increasing or decreasing the days or hours of operation, as needed, assuming available handling and storage capacity. A permanent facility can process participants more efficiently than one-day collection events because of dedicated staffing and the operational characteristics of such a facility. However, permanent facilities do not have the flexibility to operate in various locations as do periodic collection events or mobile collection units.

5.2.4 Implementability

A permanent facility could be implemented in the medium-term planning period. The implementation phase for a permanent facility requires approximately 3 to 5 years for site assessment, CEQA compliance, permitting, design, and construction.

5.2.5 Facility Needs

This alternative requires the development of a collection and storage facility, and therefore receives a low rating. An HHW facility must meet specific state and federal safety and operating standards, and must meet local zoning requirements. A facility should be designed to prevent spills or leaks of incompatible wastes from mixing, and should include explosion proofing, proper containment, sufficient ventilation, and adequate emergency response and safety equipment. A permanent facility must be consistent with siting requirements of the County Hazardous Waste Management Plan and must meet all air quality requirements stipulated by the South Coast Air Quality Management District.

5.2.6 Consistency with Local Policies

A permanent facility is not consistent with local policies, plans, and ordinances to provide ongoing and immediate disposal services. The City plans to provide HHW collection and disposal alternatives to its residents through participation in a Countywide program; the County in turn may consider permanent facilities in connection with the mobile program.

5.2.7 Absence of Institutional Barriers

Because of their lengthy processing time, permit requirements for a permanent HHW collection facility may present a temporary barrier to the implementation of this alternative. However, the permitting process is expected to become more streamlined as more jurisdictions develop HHW facilities.

5.2.8 Estimated Cost Rating

The costs associated with developing and operating a permanent HHW collection facility are significant. Based on operating experience at other permanent HHW collection facilities, annual operating costs for a facility operating one day per week may be as high as \$2,000,000. Capital costs may range from one to several million dollars in Los Angeles County.

5.2.9 End Uses

End uses for selected HHW are considered relatively stable. Reuse of unopened, reusable products can be promoted through waste exchanges

or organized referrals. Nonrecyclable HHW will be managed via treatment or disposal at a hazardous waste disposal facility.

5.3 ALTERNATIVE 3 - MOBILE HHW COLLECTION (COUNTYWIDE PROGRAM)

A mobile waste collection program consists of a modified trailer and support unit. A mobile facility should be capable of being dismantled in a short time, once a collection event is completed. A mobile collection program, as opposed to a periodic collection event, provides the opportunity for numerous days and locations for collection throughout the year. A mobile waste collection program should be implemented on a Countywide or regional basis. Residents should be assured that a mobile collection unit would be within a reasonable drive from their home sometime during the year. The costs associated with implementation of such an option at the City level preclude it from serious consideration. Therefore, only the Countywide option is presented.

The County of Los Angeles is developing a Countywide HHW collection program. The program will consist of at least two mobile collection units, each of which will visit up to 24 different sites in a year and will collect HHW for two days at each site. Each unit may visit the same site twice in a given year for a total of 96 collection days.

5.3.1 Effectiveness in Reducing Targeted Materials

A mobile collection facility is highly effective at collecting HHW in a large geographical area such as Los Angeles County. Depending on the collection sites, this alternative could be very effective for City residents.

5.3.2 Absence of Hazards

Potential public health risks and safety hazards associated with mobile collection include spills, fires, leaks, or explosions resulting from improper collection, storage, handling, or transport of hazardous materials. However, proper facility design, equipment, operation, and health and safety training of workers can minimize potential hazards.

5.3.3 Flexibility

A mobile collection unit is flexible since both location and frequency of operation can be readily changed to accommodate variations in demand and shifts in population density. However, because the location of the unit changes, the public must be informed in advance of the time and location of the events.

5.3.4 Implementability

A mobile collection program can be implemented in the short-term planning period. To purchase and modify equipment needed to operate a mobile collection facility will require approximately 6 to 12 months. The DHS currently regulates mobile collection programs in the same manner as temporary collection facilities; the permitting process would therefore require approximately the same amount of time.

5.3.5 Facility Needs

The mobile collection program requires a modified trailer and support unit. When set up for operation, the collection site will cover approximately 5,000 square feet of paved area with canopies over the work area. The collection site should be secured at night with a portable fence. No purchase of land or construction of facilities is required. Potential collection sites include parking lots at churches, schools, fire stations, or other governmental facilities. The County DPW will work with landowners to reduce concerns regarding liability.

5.3.6 Consistency with Local Policies

Mobile collection is consistent with the City's objective of cooperating on a Countywide basis with the DPW in implementation of a HHW program.

5.3.7 Absence of Institutional Barriers

No regulatory prohibitions exist for implementing a mobile HHW collection program. Identifying sites with adequate access, convenience, and safety may pose problems. Liability issues associated with entering into agreements to use private properties for collection activities may also pose temporary barriers for the mobile collection program.

5.3.8 Estimated Cost Rating

Based on data provided by the DPW, the operating costs for each mobile collection unit will be approximately \$4,500,000, including costs for waste management, personnel, equipment, and education. The County intends initially to operate two mobile units. The costs to operate the units will be provided through a \$0.56 per ton surcharge on tipping fees at all landfills within the County. There will not be any costs for the City to participate in the Countywide program. However, for estimating purposes the cost for each participating City will be a function of the annual solid waste disposal rate.

5.3.9 End Uses

A mobile collection program can divert solvents, latex paint, oil, batteries, and other recyclables from the waste stream through recycling or incineration in an alternative fuels program. Nonrecyclable HHW collected through the program will be properly disposed at a permitted hazardous waste management facility.

5.4 ALTERNATIVE 4 - DOOR-TO-DOOR HHW COLLECTION PROGRAM

A door-to-door HHW collection program offers residents a very convenient means of participation in collection programs. This program could target only elderly and disabled residents or all residents. Vehicles used for this type of program are specially equipped to handle hazardous waste and require a staff trained in hazardous waste identification. Once collected, the waste is transferred to an approved treatment, storage, or disposal facility where it can be lab-packed or bulked, and then transported off site for recycling or disposal at a permitted facility.

5.4.1 Effectiveness in Reducing Targeted Materials

A door-to-door HHW collection program could be very effective in reducing the volume and weight of HHW disposed in area landfills, if it were to service all residents. Its effectiveness on overall HHW diversion is minimal if the program serves only elderly and disabled individuals.

5.4.2 Absence of Hazards

Potential public health risks and safety hazards associated with door-to-door collection include spills, fires, leaks, explosions, or exposure to children or pets, resulting from improper collection, storage, handling, or transport of hazardous materials. Traffic accidents may also be a concern due to the presence of collection vehicles on residential streets. However, proper design, equipment, and health and safety training can minimize any potential hazards.

5.4.3 Flexibility

Door-to-door collection events are flexible to changing conditions. The number of pickups made can be easily adjusted depending upon demand as long as the program includes a proactive mechanism for notifying residents and sufficient equipment capacity.

5.4.4 Implementability

Door-to-door collection programs can be implemented in the short-term planning period.

5.4.5 Facility Needs

This service most likely would be provided on a contractual basis from a licensed hazardous waste hauler. Door-to-door collection events require trucks equipped to transport, handle, sort, and store hazardous materials. An area is also needed to store materials once collected, which would be the responsibility of the selected collection contractor.

5.4.6 Consistency with Local Policies

Door-to-door collection is not consistent with present local policies. However, the City plans to provide HHW collection and disposal alternatives to its residents through participation in a Countywide program.

5.4.7 Absence of Institutional Barriers

The liabilities of a door-to-door collection program are significant, including the collection and transportation of HHW. The City must contract with firms that are licensed as hazardous waste transporters in the state.

5.4.8 Estimated Cost Rating

Door-to-door collection programs are the most expensive type of program due to the transportation and collection costs.

5.4.9 End Uses

A door-to-door collection program can divert latex paint, oil, and batteries from disposal through recycling. Other usable wastes can be incinerated in an alternative fuels program. Nonrecyclable HHW collected through the program are properly disposed at a permitted hazardous waste disposal facility or incinerated.

5.5 ALTERNATIVE 5 - LOAD-CHECKING PROGRAM

The purpose of a load-checking program is to detect and deter attempts to dispose of prohibited waste at permitted landfills. Load-checking programs are monitoring programs that are required at all solid waste landfills. They involve a visual inspection for hazardous waste at the point of collection and at the working face of the landfill. Because the City has no landfills within its jurisdiction, load-checking programs do not apply to the City. Therefore, the criteria are not evaluated.

5.6 ALTERNATIVE 6 - RECYCLING PROGRAM FOR HHW

A recycling program for HHW targets materials that can be readily recycled. Many communities have integrated recycling programs into their existing collection events, drop-off centers, or door-to-door pickup programs. Many private businesses, such as automotive stores and service stations, provide opportunities for recycling used oil and batteries. By recycling HHW, the residents of the County can help divert these materials from disposal and preserve resources and reduce the high costs associated with proper HHW disposal. The DPW is currently working with various oil companies and paint manufacturers to establish return/recycling programs. Any new programs adopted by the County will be conducted in conjunction with and to enhance existing recycling efforts.

5.6.1 Effectiveness in Reducing Targeted Materials

Recycling programs are very effective in reducing the volume and weight of hazardous materials disposed at sanitary landfills and hazardous waste disposal facilities.

5.6.2 Absence of Hazards

Potential public health risks and safety hazards associated with recycling programs include spills, fires, leaks, or explosions resulting from improper collection, storage, handling, or transportation of hazardous materials. However, proper design, equipment, and health and safety training minimize any potential hazards.

5.6.3 Flexibility

Recycling programs are generally flexible to changing conditions. The volumes of materials accepted can fluctuate based on demand and public awareness. Increasing the frequency of pickup by the end users can address these fluctuations.

5.6.4 Implementability

Recycling operations can be relatively easy to implement with existing or planned programs during the short-term planning period.

5.6.5 Facility Needs

A storage facility is needed to recycle HHW. Recycling HHW can be integrated into existing facilities and programs including curbside collection programs, drop-off centers, and periodic, mobile, and permanent collection facilities. Permitting and zoning issues must also be addressed.

5.6.6 Consistency with Local Policies

Recycling HHW is consistent with the City's policy of recycling and providing cost-effective management options for HHW.

5.6.7 Absence of Institutional Barriers

Institutional barriers are anticipated to have little impact on this alternative. Effective January 1, 1991, pursuant to AB 2597, HHW collection agencies

no longer need a hazardous waste permit if materials accepted are limited to: (1) latex paint, (2) used oil, (3) antifreeze, (4) spent lead-acid batteries, (5) nickel-cadmium, alkaline, carbon-zinc, and other small batteries.

Section 25250.11(a) of the Health and Safety Code exempts from its hazardous waste permit requirements any person who receives used-oil from consumers or other used oil generators, as long as no more than 20 gallons of used oil are received at a time, and containers hold no more than 5 gallons each. The DHS will allow a facility or collection event to bulk latex paint if it is properly authorized to accept latex paint.

Government Code Section 66798.9 (Statute, 1989) provides immunity for local agencies operating HHW programs unless the agencies act negligently. Additional immunity from state liability is provided in Health and Safety Code Section 25366.5 for local governments or their contractors who are running HHW facilities and events.

5.6.8 Estimated Cost Rating

Recycling HHW reduces the costs of disposal for HHW collected during collection events, mobile collection, or at a permanent facility. For example, the cost of waste oil recycling is less than \$1 per gallon, for paint it is less than \$8 per gallon, and for batteries there is no cost to the collection program.

5.6.9 End Uses

Recycling options for waste oil, automotive batteries, and latex paint are well established. Common uses of recyclable HHW include the following:

- Latex paint can be collected, sorted, consolidated, blended, repackaged, and sold or given to local public agencies and nonprofit groups. It is commonly used to cover graffiti. It can also be sorted, consolidated, and sent to a paint company, which can mix it with its own waste paint and manufacture new paint.
- Used oil is a valuable resource. Recycling used oil saves energy and natural resources. Used oil can be refined into lubricating oil, reused as motor oil, or reprocessed and used as fuel in industrial burners and boilers. The Environmental Protection Agency estimates that only

1 gallon of used oil is needed to make 2.5 quarts of lubricating oil, compared to 42 gallons of raw crude oil.

- Lead-acid batteries can be recycled. In fact, according to the CIWMB, 70% of spent lead-acid batteries are currently recycled. "After the lead is separated from the non-metallic components of the battery, it is then smelted to produce soft lead and lead alloys. Most of these lead products are used to make new lead-acid batteries. The non-metallic materials include sulfuric acid, which is neutralized and released into the sewer; the plastic shell is reclaimed; and other nonrecyclable, nonhazardous material is disposed of." (*Household Hazardous Waste, Lead-Acid Batteries*, CIWMB, September 1990).
- Small Household Batteries - Recycling options for small household batteries are limited at this time. Silver oxide button batteries may be recycled, but substantial obstacles exist to collecting and sorting these batteries. Consumer nickel-cadmium battery recycling may be available in the near future. Recycling options for small household batteries are currently under study by the CIWMB.
- Used antifreeze can be recycled for use by the mining industry. Antifreeze is sprayed on coal to keep it from sticking together. In addition, antifreeze can be used for airplane deicing solution, cement grinding, and brake fluid. (*Household Hazardous Waste, Antifreeze*, CIWMB, September 1990).

5.7 ALTERNATIVE 7 - PUBLIC EDUCATION AND INFORMATION

Public education and information are important elements of HHW programs. Successful programs require ongoing efforts to inform residents of the hazards of some household materials and the proper avenues available for their disposal. The program should serve to educate consumers about the hazards of household products and the proper management of these products. An education program should encourage the use of nonhazardous products, buying household hazardous materials only in quantities that will be used, proper storage,

and proper disposal of HHW. An effective program will inform the community about the available recycling and disposal options, in addition to educating the public about the dangers of HHW and nonhazardous alternatives.

The County DPW is currently using a variety of materials and promotions to educate the public and to gain voluntary participation in the HHW collection events. The County will cooperate with the City on a variety of new educational public information activities. The details of these activities are presented in Chapter 9.

5.7.1 Effectiveness in Reducing Targeted Materials

Public education and information are extremely effective methods for increasing awareness about proper disposal of HHW, and may increase participation during collection programs. Offering the community information about safe alternatives to hazardous products can reduce the amount of HHW being generated in the City. Education about safe alternatives to hazardous materials, and information regarding collection events will work to help eliminate HHW from entering area landfills.

5.7.2 Absence of Hazards

No physical hazards are associated with implementing a public education and information program. However, the information regarding nonhazardous alternatives to HHW must be accurate to minimize hazards.

5.7.3 Flexibility

Educational programs are adaptable to changing conditions in demographics, markets, products, etc.

5.7.4 Implementability

A public education and information program is relatively easy to implement in the short-term planning period.

5.7.5 Facility Needs

No additional facilities are needed. Existing facilities could serve as locations for seminars and educational workshops.

5.7.6 Consistency with Local Policies

Education and public information are consistent with City policies. The County of Los Angeles will develop and administer an education and public information program targeted at all county residents.

5.7.7 Absence of Institutional Barriers

There are no barriers to offering the public educational materials.

5.7.8 Estimated Cost Rating

The DPW budget for education and public information efforts in Los Angeles County will be approximately \$1,000,000 per year. The City has no separate budget for HHW education.

5.7.9 End Uses

Not applicable.

6 PROGRAM SELECTION

The City has elected to participate in the County's HHW program.

6.1 ALTERNATIVES SELECTED

6.1.1 Short-Term Planning Period

The City understands that the County's program will consist of the following programs.

Alternative 1 - Periodic HHW Collection Events. County-sponsored collection events will offer City residents a disposal option for their HHW in the short term while the mobile collection program is being developed. Collection events are not an effective long-term HHW management option on a Countywide basis, due to the size of the County and lack of operational facilities. However, these events will be continued until the Countywide mobile collection program becomes operational. No sites have been selected yet for future events.

Alternative 3 - Mobile HHW Collection. A mobile collection program being developed by the County will operate approximately 96 days per year. The mobile collection program will be brought on-line in late 1992 early 1993. Residents will be able to dispose of their hazardous waste at any of the locations where the mobile facility is operational. No sites have been selected yet.

Alternative 5 - Load-Checking Program. A load-checking program deters prohibited wastes from entering the landfill or transfer station. Area landfills and transfer stations have been operating load-checking programs since 1983. State regulatory agencies require landfills and transfer stations to operate hazardous waste load-checking programs. Because they are required by law, the load-checking programs will continue as an ongoing program.

Alternative 6 - Recycling Program for HHW. As of January 1, 1991, HHW collection agencies no longer need a hazardous waste permit for collection of recyclable HHW, if the materials accepted are limited to: (1) latex paint, (2) used oil, (3) antifreeze, (4) spent lead-acid batteries, and (5) nickel-cadmium, alkaline, carbon-zinc, and other small batteries.

The County's program will recycle HHW for which markets exist and will be compatible with existing HHW recycling efforts, (e.g., waste oil and paint recycling).

Alternative 7 - Public Education and Information. Existing public education programs that inform the community about HHW and its proper disposal will continue. The County will take the lead on the education programs; the City will coordinate with the County on these programs. The programs will educate consumers about the hazards of some household products and their proper management. In addition, the programs will encourage the use of nonhazardous products, the purchase of household hazardous materials only in quantities that will be used, and proper storage and disposal. The County will also expand the education and public information program to educate all County residents, and will provide an educational program for schoolchildren. In addition to education, aggressive public advertising and information efforts will be made to publicize the services provided by the County.

6.1.2 Medium-Term Planning Period

The programs selected to manage HHW during the short-term planning period will continue in the medium-term planning period with the exception of the periodic collection events. The one-day events will be phased out during the beginning of the medium-term planning period, after the mobile collection program is fully operational.

6.2 TYPES AND QUANTITIES OF HHW

The short- and medium-term programs are designed to increase the collection and awareness of the hazards of HHW. Public participation at collection events and use of mobile facilities can be expected to increase along with increased public information and education programs. The success of the County program will depend on the public information programs.

Because an ongoing program will make HHW disposal more accessible to residents on a regular basis, it is expected that the quantity of HHW collected will increase over time as more residents become aware of the operation of the program. Based on data generated during the previous County sponsored collection events, the County assumes a participation rate of 500 households per collection day using the mobile units. With a

total of 96 collection days for the two units, a total of 500,000 gallons (2,100 tons) of HHW could be expected Countywide including:

- Paint: 240,000 gallons
- Waste oil: 100,000 gallons
- Solvents: 29,000 gallons
- Batteries: 7,000 units

Based on information from previous collection events it is estimated that 50 households from the City will participate in HHW collection events and 515 gallons of HHW will be collected.

The County anticipates that all types of HHW will be collected including automotive products, pesticides, household cleaners, and hobby and art supplies. The County will not accept munitions, explosives, radioactive materials, or infectious wastes.

6.3 RECYCLING AND REUSE EFFORTS

The current recycling efforts associated with the HHW collection events will be continued until the new mobile collection program has been implemented. A recycling program, as well as a materials exchange program, could be included in the operations of the mobile HHW collection facility.

6.4 PUBLIC EDUCATION PROGRAMS

In the short-term planning period, public education and information programs proposed by the County will continue to inform the public about the currently available collection events, facilities that accept certain HHW, and additional collection programs.

An aggressive education program utilizing HHW educational videos and other educational materials will also be implemented by the County. Some of these materials are currently available from several agencies, and organizations including the DHS, CIWMB, League of Women Voters, and local governments throughout the United States. For a complete discussion of education and public information, refer to Section 9.

6.5 MULTIJURISDICTIONAL HHW EFFORTS

The County will develop a Countywide HHW program including mobile collection facilities and a public education program. The City plans to participate in the County program. To this end, the City is prepared to sign a Memorandum of Understanding (MOU) with the County. No details are available on the MOU at this time.

6.6 FACILITIES NEEDED FOR IMPLEMENTATION

Operation of a mobile collection unit will require a location for set-up. County- and/or City-owned maintenance yards or facilities, and suitable private properties such as shopping center parking lots, recreational parks, churches, and vacant lots, may be utilized for stationing the mobile units. The City will work with the County on selecting locations and should volunteer a location within the City limits.

The site layout and the equipment used for the mobile facilities will be similar to the one-day collection events. An office area, laboratory, waste bulking, packaging and storage areas, and emergency response equipment such as eye washes and fire extinguishers will be required.

6.7 HANDLING AND DISPOSAL METHODS

Proper handling and disposal methods are guided by State and Federal regulations. The existing collection events are staffed by professionals trained to handle hazardous materials. The staff for the mobile facility will be trained in proper handling of HHW. During the first year or two of the mobile collection program, a contractor will be retained by the County to conduct and manage the overall program. This is similar to the current arrangement for the single-day collection events. After the mobile collection program has been well established, County employees may be trained to manage the mobile collection program.

7 PROGRAM IMPLEMENTATION

The following section identifies the tasks required by the City to implement the County program, the agencies responsible for implementation, the implementation schedule, and the costs associated with the program.

7.1 SHORT-TERM IMPLEMENTATION PLAN

The tasks that must be completed by the City in the short term include formalizing the intrajurisdictional relationship with the County and establishing a monitoring and evaluation program. These tasks will require approval by the City Council. The City will formalize the intrajurisdictional agreement once it is submitted by the County DPW.

The City may be asked to identify a collection site which may be used by the County for siting of the mobile unit. Also, the City will assist the County with advertising efforts when the mobile unit is in the City's vicinity. The short-term implementation plan for selected alternatives, including specific tasks, completion, and staff responsible for implementation is shown in Table 7-1.

7.2 MEDIUM-TERM IMPLEMENTATION PLAN

The medium-term implementation plan consists of continuing the programs that were implemented before and during the short-term planning period, with adjustments made as needed as a result of the monitoring and evaluation program (Section 8). Table 7-1 presents the proposed implementation plan.

7.3 IMPLEMENTATION COSTS

There are no direct costs for the City to implement the HHW Countywide program. The County's cost to implement the program will be paid for by a \$0.56 surcharge placed on each ton of waste disposed in landfills or transformation facilities located in the County or shipped out of the County for disposal or incineration.

FINAL DRAFT

Table 7-1

Short-Term and Medium-Term Implementation Plan

Alternative/Task	Completion Date	Responsible Party
Formalize Agreement with County		
• Review, approve, and adopt Countywide program	Spring 92	Community Development Department (CDD)/City Council
• Review, sign, and adopt MOU	Spring 92	CDD/City Council
1 Periodic Collection Events		
• Identify site	Spring 92	Los Angeles County Department of Public Works (LACDPW)
• Obtain permit	Spring 92	LACDPW
• Hire contractor	Spring 92	LACDPW
• Advertise schedule and locations	ongoing	LACDPW/CDD
• Conduct events	ongoing	LACDPW
3 Mobile Collection Unit		
• Formalize relationship with participating cities	Spring 92	LACDPW
• Develop schedule and selected sites	ongoing	LACDPW
• Obtain permits	Spring 92	LACDPW
• Develop recordkeeping system	Spring 92	LACDPW
• Evaluate contractor	Spring 92	LACDPW
• Contract for transportation, recycling, and disposal services	Spring 92	LACDPW
• Advertise schedule and locations	Spring 92	LACDPW/CDD
• Conduct events	Spring 92	LACDPW
5 Load-Checking Program		
• Continue Program	in progress	LACDPW, Local Enforcement Agency, and County Sanitation Districts

FINAL DRAFT

Table 7-1

Short-Term and Medium-Term Implementation Plan

Alternative/Task	Completion Date	Responsible Party
6 Recycling Program for HHW		
• Identify collection sites	ongoing	LACDPW
• Set up site for collection	ongoing	LACDPW
• Evaluate recycling contractors	ongoing	LACDPW
• Develop waste exchange procedures	Spring 92	LACDPW
• Develop residents' waiver	Spring 92	LACDPW
• Work with businesses to set up private collection centers	ongoing	LACDPW
7 Education and Public Information		
• Develop and distribute pamphlets for residents	ongoing	LACDPW/CDD
• Develop and distribute other educational materials for residents and schools	ongoing	LACDPW/CDD
• Provide training for staff	ongoing	LACDPW
• Operate HHW hotline	ongoing	LACDPW
• Develop exhibits and displays	ongoing	LACDPW
• Give presentations	ongoing	LACDPW
Monitor and Evaluate	ongoing	CDD

8 MONITORING AND EVALUATION

8.1 METHODS TO QUANTIFY AND MONITOR ACHIEVEMENT OF OBJECTIVES

Based on the City's understanding of the County program, the County will monitor achievement of the HHW management program objectives by the following methods:

- Selected waste characterization studies
- Recordkeeping
- Surveys
- Annual reports

Each of these methods is described in Section 8.2. In addition to the County's monitoring and evaluation methods, the City will implement the following methods:

- Participation in regular meetings with the County regarding collection schedules, recycling efforts, and program status and success
- Review of individual City report provided by the County identifying
 - quantity of HHW collected
 - types of HHW collected
 - methods of handling
 - participation rates
- Comparison of the City's report with existing levels of effort and participation and identification of short falls
- County feedback

8.2 WRITTEN CRITERIA FOR EVALUATING PROGRAM EFFECTIVENESS

It is the City's understanding that the County will evaluate the success of each HHW program by the following criteria:

- Targeted HHW characterization studies will be conducted using selected loads incoming to selected landfills and/or transfer stations. This will identify HHW disposal trends.
- The quantity of HHW collected will be recorded by the city/community of origin, using CIWMB adopted reporting forms. Collected volumes will be compared to the collection objectives set in Section 6.2.
- The quantity and types of HHW recycled and reused will be recorded by the city/community of origin, and will be compared to the recycling achievements of CY 1990 (i.e., 70 percent of the total waste collected).
- Public surveys will be conducted to evaluate the effectiveness of the public education program in the areas of source reduction of HHW management.
- Public surveys will be conducted to evaluate the effectiveness of the advertising and outreach tools utilized (i.e., radio, newspaper, flyer, etc.).
- The program will be monitored and evaluated for its ability to run according to pre-set schedules.
- The increase/decrease in the number of private/public recyclables collection centers will be evaluated and compared to the estimated number of centers available in CY 1990.
- Private/public recyclables collection centers will be surveyed for participation rates and volumes of materials collected.
- Performance and cost of different contractors will be evaluated for identification of the most suitable ones.
- The program will be evaluated against occurrence of accidents and unexpected problems.

- Individual reports containing information on the quantity and types of HHW collected annually, method of handling, and participation rates based on the city/community of origin will be prepared for each participating city.
- Annual reports will be prepared for the Countywide program, as well as a report for the unincorporated areas of the County.

In addition, the City will undertake the following monitoring activities:

- Total HHW collected from City residents.
- Type of HHW collected from City residents.
- Households utilizing programs will be monitored to determine if stronger and more extensive education and public information programs should be implemented to increase participation rates.

8.3 RESPONSIBLE PARTIES

The DPW and the CSD will be responsible for implementation of the Countywide HHW program during the short-term planning period. Once the single-day collection events have been phased out, the DPW will be responsible for the ongoing HHW management program including mobile collection facilities and public education. The City Community Development Department will be responsible for coordination of the HHW management program with the County. The City will attend meetings with the DPW and CSD and implement certain aspects of the educational programs on a City basis.

8.4 MONITORING AND EVALUATION FUNDING REQUIREMENTS

Funding is needed to monitor and evaluate the effectiveness of the selected programs. The funding source for the entire Countywide program is the tipping-fee placed on all solid waste accepted at landfills and transformation facilities within the County. Additional funding may be made available through State grants and funds. A portion of these funds will be allocated for monitoring and evaluation purposes.

The City will also monitor and evaluate the effectiveness of the selected programs. The funding for this activity will come from the General Fund. These costs are included in Table 10-1.

8.5 CONTINGENCY MEASURES: COUNTY

8.5.1 Short-Term Planning Period

The City understands that the County will take one of three steps if the County fails to make reasonable progress toward its 1995 HHW objectives:

- Step 1 This step assumes the HHW program objectives are reasonable and that the selected alternatives are adequate to achieve the objectives. In this case, the monitoring and evaluation program will be re-evaluated to determine if sufficient and timely information is available to accurately evaluate the program's progress. If it is determined that the monitoring and evaluation program is adequate, Step 2 will then be followed. If it is inadequate, then adjustments will be made (e.g., more frequent reporting, different quantification techniques).
- Step 2 Step two assumes the monitoring and evaluation procedures are adequate and the program alternatives are properly selected, but the identified objectives are not achievable within the planning period. Under this scenario, the objectives will be revised downward.
- Step 3 Step three assumes that the monitoring and evaluation plans are adequate and the objectives are attainable, however, the alternatives selected for implementation are inadequate to reach the objectives or cannot be implemented by the target date, or other feasible alternatives become available. Under this scenario the County will consider the following:
 - Increase the level of effort for public education and information
 - Increase the hours or days of operation at the mobile facilities
 - Increase the number of mobile collection facilities

- revise the implementation schedule

If, after a thorough evaluation, it is determined that the County's program is not sufficient to meet the City's requirements for adequate management alternatives for its HHW, the City will consider:

- joining with other cities to conduct annual or semi-annual collection events
- contracting individually with a HHW contractor to provide the City with a collection event, or HHW management services in connection with a MRF or other solid waste management system

These alternatives will only be reviewed if the County's program does not achieve the necessary goals or provide the City with a viable HHW management system.

8.5.2 Medium-Term Planning Period

If the County fails to make reasonable progress toward its year 2000 objectives, three steps will be taken. These three steps are identical to those for the short-term planning period.

8.6 CONTINGENCY MEASURES: CITY

8.6.1 Short-Term Planning Period

If the City fails to make reasonable progress toward its 1995 HHW objectives, the following contingency measures will be considered.

- Increase the level of effort for public education and information programs.
- Consider offering a site in the City for the mobile HHW collection unit.

8.6.2 Medium-Term Planning Period

If the City fails to make reasonable progress toward the year 2000 objectives, the contingency measures used in the short term will be repeated.

9 EDUCATION AND PUBLIC INFORMATION

Education and public information compose the single most important element of any waste diversion program. The success or failure of a program to meet expectations usually can be traced to the level of public awareness and the effectiveness of efforts to gain voluntary compliance.

This component includes: a statement of objectives; a description of existing programs; a description of target audiences for such programs; the selection of program alternatives; an implementation plan; and a monitoring and evaluation program.

9.1 SHORT-TERM AND MEDIUM-TERM OBJECTIVES

The following education and informational objectives for the short- and medium-term planning periods have been identified:

- Beginning in 1991 and continuing through the medium-term planning period, to provide education and public information on HHW, emphasizing source reduction, reuse, and recycling.
- To incorporate education and public information efforts into all integrated waste management programs by 1993.
- To advertise available HHW collection services.

9.2 CURRENT EDUCATION AND PUBLIC INFORMATION PROGRAMS

The City residents benefit from the County's continued education efforts. The DPW is responsible for various waste management programs, including the HHW Program. The County has used a variety of materials and promotions to educate the public and to gain voluntary participation in the HHW collection events.

The County has prepared and distributed pamphlets and fliers during HHW collection events, maintained a HHW/Recycling Hotline, and has advertised collection events through the distribution of fliers, in newspapers and on the radio, and television.

9.3 TARGETED AUDIENCES

City residents in single-family and multifamily units will be a targeted audience for HHW education and public information programs. Schools will also be targeted because information on proper disposal and product substitution can be incorporated into other integrated waste management educational programs that address source reduction and recycling.

9.4 PROGRAM SELECTION

The County, in cooperation with the City, will implement education and public information activities. These activities may include:

- Develop and distribute a pamphlet that will assist the City in answering questions from residents regarding proper management and disposal of hazardous materials in the home. The pamphlet will contain suggestions for alternative nonhazardous products. A directory of public agencies and organizations involved with management of HHW will also be included in the pamphlet.
- Update and distribute a calendar of county-sponsored HHW collection events and a list of City and County personnel to be contacted for questions.
- Establish contacts with retailers to discuss the role they can play in HHW education, such as printing information on grocery bags and other consumer goods.
- Establish school contacts to integrate household hazardous waste education activities into the schools.
- Advertise HHW collection programs in the County and the City.
- Advertise County hotline phone numbers to provide quick access for City residents.
- Develop and distribute public service announcements, and press releases to area papers, TV, cable and radio stations, and community newsletters.
- Distribute inserts in disposal service, utility, tax, and phone bills.

- Distribute fliers at libraries, community meetings, landfill entrance facilities, churches, and schools.
- Print advertisements on grocery bags.
- Develop and emphasize reuse options (e.g., paint to theater groups, housing groups, neighbors, schools).
- Provide assistance to schools in incorporating hazardous materials education into school curriculum.
- Provide speakers and coordinate with the speakers' bureau on toxic and hazardous waste issues (enlist help of community organizations; speak at trade apprenticeship classes, high school auto shops, home repair classes, local garden clubs, and radio talk shows).

The City will coordinate with the County and surrounding jurisdictions or Cities within the Southeast Area Integrated Waste Management Group to investigate the feasibility of purchasing large quantities of educational materials to reduce the cost per unit. Regional efforts can also be used as a cost-effective approach for sponsoring radio announcements and cable television shows.

9.5 PROGRAM IMPLEMENTATION

This section identifies the tasks required to implement the selected programs, the agencies responsible for implementation, the implementation schedule, and the associated costs.

9.5.1 Short-Term Implementation Plan

The various tasks associated with implementing the program are shown on Table 7-1, along with the implementation schedule and the parties responsible for implementation.

9.5.2 Medium-Term Implementation Plan

The program implemented in the short-term planning period will be continued in the medium-term planning period, with changes made in response to the results of regular monitoring and evaluation.

9.5.3 Identification of Responsible Parties

The DPW is responsible for implementation of the Education and Public Information Program. The City Community Development Department will coordinate with the County on this program in the short- and medium-term, i.e., the City will attend routine planning and update meetings scheduled by the County and will assist the County in distribution of educational materials.

9.5.4 Implementation Costs and Revenues

The DPW assumes most of the costs of the Education and Public Information Program. The City will cooperate with surrounding jurisdictions to purchase additional educational materials and radio and television public service announcements. Program costs are included in the overall costs for Education and Public Information as presented in Section 7 of the City's SRR Element.

No revenues are expected from this component. The funding sources are discussed in Section 9, Funding Component.

9.6 MONITORING AND EVALUATION OF PROGRAMS

Education and public information programs will be monitored by the DPW to evaluate program effectiveness. This section identifies the monitoring methods, written criteria to be used for evaluation, persons responsible for monitoring, monitoring funding requirements, and contingency measures, and a schedule for monitoring and reporting.

9.6.1 Monitoring Methods

The following two methods will be used to monitor the achievement of objectives identified in Section 9.1: 1) event reporting, and 2) random telephone survey.

9.6.1.1 Event Reporting

The DPW will institute a program of tracking its own progress in implementing the education and public information programs. This program will be coordinated with the City. Information such as the type of program, targeted audience, participation rate, estimated cost, and

feedback will be recorded in order to document the level of effort being expended. The following may be included in the tracking of each activity:

- **Public Outreach/Educational Materials:** Type of materials (e.g., poster, flier, calendar, etc.), type of distribution (e.g., direct mailing, utility bill insert, videos, etc.), number distributed, date sent or distributed, feedback received, cost.
- **Public Service Announcement:** Media used (e.g., radio, television, cable television), number developed, list of media released to.
- **Videos:** Topic (e.g., recycling, source reduction, etc.), date completed, distribution (e.g., libraries, community groups, etc.), cost.
- **Exhibits and Presentations:** Date, event, location, number of participants, materials distributed, feedback, staffing cost, targeted audiences.
- **Mobile Unit Tours:** Date, location, number of participants, type of participants (e.g., community group, interested citizens, etc.), group leader, cost.
- **Multifamily Residence Responsible Party:** Date started, number of volunteers, materials distributed, reports of individual activities by each responsible party.
- **Hotline:** Numbers of incoming calls, location of callers.

Information generated by the County regarding the progress of the various programs will be made available to the City.

9.6.1.2 Random Survey

Individuals participating in various collection events will be surveyed randomly for the participants' knowledge of basic HHW issues, their efforts in source reduction, and to discover their geographic distribution, and the effectiveness of various outreach tools.

9.6.2 Responsible Parties

Unless noted otherwise, the DPW will be responsible for monitoring and evaluating the effectiveness of the Education and Public Information program.

Any programs the City wishes to implement above and beyond the Countywide program will be monitored by the City Community Development Department.

9.6.3 Monitoring/Evaluation Funding Requirements

Unless noted otherwise, the funding requirements for monitoring and evaluation of this specific component are the responsibility of the DPW.

Any programs the City wishes to implement above and beyond the Countywide program will be the responsibility of the City.

9.6.4 Contingency Measures

9.6.4.1 Short-Term Planning Period

If the County fails to make reasonable progress toward its 1995 education and public information objectives, three steps will be taken.

Step 1 This step assumes the education and public information program objectives are reasonable and that the selected alternatives are adequate to achieve the objectives. In this case the monitoring and evaluation program will be re-evaluated to determine if sufficient and timely information is available to accurately evaluate the education and public information program's progress. If the monitoring and evaluation program is adequate, Step 2 will then be followed. If the monitoring and evaluation program is inadequate, then adjustments will be made (e.g., more frequent reporting, different reporting techniques).

Step 2 This step assumes the monitoring and evaluation procedures are adequate and the program alternatives are properly selected but the identified objectives are not achievable within the planning period. Under this scenario the objectives will be revised.

Step 3 This step assumes that the monitoring and evaluation program is adequate and the objectives are attainable, however, the public education and information program is inadequate to reach the objectives. Under this scenario the County will identify additional techniques to target residents, evaluate the current staffing level, and evaluate the current level of funding.

9.6.4.2 Medium-Term Planning Period

If the County fails to make reasonable progress toward its year 2000 objectives, the same three steps used for the short-term planning period will be taken.

9.6.5 Annual Reports

The program will be monitored on a continuous basis and the results of each event will be tabulated using the monitoring criteria. Annual reports will be prepared for the Countywide HHW public education and information program. Also, each participating city will be provided with an annual report summarizing public education/information efforts and results in the subject city.

10 FUNDING COMPONENT

The purpose of the funding component is to demonstrate that the City has sufficient funds and allocation of resources to plan, develop, and implement the HHW element programs identified in this document.

However, as stated previously, the DPW will implement and fund the Countywide HHW program. Costs to be incurred by the City will include some education and public information costs, as well as staff time necessary to monitor the effectiveness of the County program. These costs will be included in education costs described in the City's Source Reduction and Recycling Element.

10.1 ESTIMATED PROGRAM COST

Table 10-1 summarizes the estimated costs for program planning and implementation over the short-term planning period for the selected alternatives. Costs presented in this table include only those costs that will be incurred by Los Angeles County and do not include those costs that would be incurred by the private sector.

Table 10-1

Implementation Costs for Selected Alternatives

Alternative	Annual Costs			
	91/92	92/93	93/94	94/95
1 Period HHW Collection Events	448,521	465,948	484,245	503,457
3 Mobile HHW Collection	7,440,000	7,440,000	7,440,000	7,440,000
5 Load-Checking Program	(1)			
6 Recycling Program for HHW	(2)			
7 Public Education and Information	1,000,000	1,000,000	1,000,000	1,000,000
Total	\$8,888,521	\$8,905,948	\$8,924,245	\$8,943,457

(1) Load checking programs are operated by CSD.

(2) The County will implement recycling in conjunction with its mobile and periodic HHW collection programs.

10.2 ADDITIONAL STAFF RESOURCES

The County DPW will need three new positions for household hazardous waste management in the short-term planning period to help carry out the HHW element programs.

LOAD-CHECKING PROGRAM REQUIREMENTS

Waste handling and separation activities include:

1. A sign shall be posted at the entrance which states that "no hazardous, liquid, or infectious wastes are accepted." This sign will be in both English and Spanish.
2. All customers will be required to sign an acknowledge/agreement form agreeing not to transport hazardous materials into the site;
3. Scintillation-type radiation monitoring will be installed to monitor each in-bound scale. The device will be calibrated to sound an alarm when the count exceeds 400 pounds per minute above background;
4. Every incoming load shall be inspected by trained landfill personnel in the course of weighing, unloading, processing, and covering the waste. All landfill personnel, including full-time "spotters" and equipment operators, shall be trained to identify hazardous materials and other unacceptable waste, in order to protect the integrity of the landfill and the safety of all landfill personnel. If any unacceptable waste is identified, the hauler is required to recover and remove the waste.

In addition to the routine inspection of every incoming load, a formal, random waste load checking program shall be instituted. The waste load checking program shall include daily inspection of not less than two (2) random incoming waste loads. The number of incoming loads to be inspected each day shall be determined by the enforcement agency and shall be related to the permitted daily volume of refuse received by the landfill. The load(s) selected for inspection shall be dumped upon the ground in the area apart from the active working face of the landfill. The refuse shall be spread out and visually inspected for evidence of hazardous waste. Any hazardous materials thus found shall be set aside and placed in a secure area to await proper disposition

following notification of the producer (if known) and the appropriate governmental agencies;

5. Visual inspection of each days working face by landfill personnel, such as spotters, equipment operators and supervisor, for evidence of hazardous materials. Any hazardous materials thus found shall be managed as in item 4 above;
6. Landfill staff and others assigned to perform the duties required in this waste load-checking program, including visual inspection of the landfill working face, are to be trained to recognize suspicious or potential containers of hazardous waste and to perform the reporting requirements of this program. Staff are to be retrained on an annual basis and new staff are to be trained immediately;
7. All incidents of unlawful disposal of hazardous materials shall be reported as required per permits to the following agencies:
 - (a) Duty officer, County of Los Angeles Department of Health Services Toxic Waste Program at (213) 744-3223.
 - (b) Environmental Crimes Division, Los Angeles County District Attorney at (213) 974-6824.
 - (c) California Highway Patrol at (213) 735-2971.

APPENDIX B

LOAD-CHECKING PROGRAM REQUIREMENTS

HOUSEHOLD HAZARDOUS WASTE COLLECTION INFORMATION

CIWMB-303 (1/90)

October 20, 1990, Hollywood Park, Inglewood - Greenfield Environmental - 1,165 vehicles served

Name of Local Agency:

Phone:

County Sanitation Districts of LA County, Joseph D. Ralby

(213) 689-7411

Los Angeles County Department of Public Works, Brian D. Hooper

(818) 458-5118

Address:

City:

County:

State:

Zip:

1955-Workman Mill Road

Whittier

Los Angeles

California

90607-4998

900-S. Fremont Ave. 7th floor

Alhambra

Los Angeles

California

91802-1460

(Please Use Applicable Units of Measurement)

Waste Category	Gallons	Pounds	Number of Containers	Number of Drums (55 gal)	Management Method
A. Flammable					
1. Used Oil (clean)	1,784		3 truck tanks		Rc
2. Paints					
a. Mixed	5,727		paint cans		Bf
	240			25 LP	Bf
3. Solvents thinners, and stains					
4. Gasoline and oil (mixed)					
5. Aerosols (excluding pesticides/ herbicides)		1,702		18 LP	T-1
6. Other		1,953		16 LP	Bf
	976			50 LP	Bf
	5			1(5gal) LP	Bf
		2		2(5gal) LP	T-1
FLAMMABLE SUBTOTAL	8,732	3,657		3(5gal) LP 109 LP	

Management Methods		
Ru Re-used	Tr Transfer Station	T-3 Stabilization
Rc Recycle	T-1 Incinerator	D Land Disposal
Bf Blended Fuel	T-2 Aqueous Treatment	Other

Waste Category	Gallons	Pounds	Number of Containers	Number of Drums (55 gal)	Management Method
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B. Pesticides

Such as herbicides, insecticides, fungicides, etc.

	146	1,402		13 LP	T-1
				7 LP	T-1
PESTICIDE SUBTOTAL	146	1,402		20 LP	

C. Corrosives

1. Acids

a. Oxidizing

	130			8 LP	T-2
		26		1 LP	T-2

b. Non-Oxidizing

2. Alkaline

		98		2 LP	T-2
	169			11 LP	T-2

CORROSIVES SUBTOTAL

	299	124		22 LP	
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D. Oxidizers

Excluding acids

	10			1 LP	T-2
		612		8 LP	T-2
		11		2(5gal) LP	T-2
OXIDIZERS SUBTOTAL	10	623		2(5gal) LP	
				7 LP	

E. Miscellaneous

1. Car Batteries

		1,500			Rc
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2. Mercury

		13		1(5gal) LP	Rc
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3. Other

		600		3 BD	D
		12		1 LP	T-1
		1		1(5gal) LP	T-2
	1			1(5gal) LP	T-2
MISC. SUBTOTAL	1	2,126		3 BD/1 LP	
				8(5gal) LP	

TOTAL WASTE COLLECTED

	9,188	7,932		8(5gal) LP	
				3 BD/169 LP	

HOUSEHOLD HAZARDOUS WASTE COLLECTION INFORMATION

CIWMB-303 (1/90)

June 16, 1990, Cal Poly Pomona - Greenfield Environmental - 2,068 vehicles served

Name of Local Agency:

County Sanitation Districts of LA County, Joseph D. Reilly

Los Angeles County Department of Public Works, Brian D. Hooper

Phone:

(213) 699-7411

(818) 458-5118

Address:

1955-Workman Mill Road

City:

Whittier

County:

Los Angeles

State:

California

Zip:

90807-4998

900-S. Fremont Ave. 7th floor

Alhambra

Los Angeles

California

91802-1460

(Please Use Applicable Units of Measurement)

Waste Category	Gallons	Pounds	Number of Containers	Number of Drums (55 gal)	Management Method
A. Flammable					
1. Used Oil (clean)	4,969		4 truck tanks		Rc
(contam.)	1,265			23 BD	Bf
2. Paints					
a. Mixed	14,394		paint cans		Bf
	209			12 LP	Bf
3. Solvents					
thinners, and	742			32 LP	Bf
stains					
4. Gasoline and					
oil (mixed)					
5. Aerosols					
(excluding					
pesticides/		2,028		23 LP	T-1
herbicides)					
6. Other	292			18 LP	T-1
		14		3 LP	T-1
FLAMMABLE					
SUBTOTAL	21,871	2,042		23 BD/88 LP	

Management Methods		
Ru Re-used	Tr Transfer Station	T-3 Stabilization
Re Recycle	T-1 Incinerator	D Land Disposal
Bf Blended Fuel	T-2 Aqueous Treatment	Other

Waste Category	Gallons	Pounds	Number of Containers	Number of Drums (55 gal)	Management Method
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B. Pesticides

Such as
herbicides,
insecticides,
fungicides, etc.

		1,161		12 LP	T-1
	313			18 LP	T-1

PESTICIDE
SUBTOTAL

	313	1,161		30 LP	
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C. Corrosives

1. Acids

a. Oxidizing

	130			7 LP	T-2
		26		3 LP	T-2

b. Non-Oxidizing

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2. Alkaline

		6		1 LP	T-2
	96			5 LP	T-2

CORROSIVES
SUBTOTAL

	228	82		16 LP	
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D. Oxidizers

Excluding acids

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OXIDIZERS
SUBTOTAL

--	--	--	--	--	--

E. Miscellaneous

1. Car Batteries

		6,400	320 batteries		Rc
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2. Mercury

--	--	--	--	--	--

3. Other

		2,465		11 BD	D
	358			18 LP	T-2
		1,699		22 LP	T-2

MISC.
SUBTOTAL

	358	10,564		11 BD/40 LP	
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TOTAL WASTE
COLLECTED

	22,768	13,799		34 BD/174 LP	
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HOUSEHOLD HAZARDOUS WASTE COLLECTION INFORMATION

CIWMB-303 (1/90)

May 19, 1990, Districts Parking Lot, Whittier - Safety Specialists, Inc. - 2,008 vehicles served

Name of Local Agency:

Phone:

County Sanitation Districts of LA County, Joseph D. Reilly

(213) 899-7411

Los Angeles County Department of Public Works, Brian D. Hooper

(818) 458-8118

Address:

City:

County:

State:

Zip:

1955-Workman Mill Road

Whittier

Los Angeles

California

90607-4998

900-S. Fremont Ave. 7th floor

Alhambra

Los Angeles

California

91802-7460

(Please Use Applicable Units of Measurement)

Waste Category	Gallons	Pounds	Number of Containers	Number of Drums (55 gal)	Management Method
A. Flammable					
1. Used Oil	4,950		3 tank trucks		Rc
2. Paints					
a. Latex	4,032		paint cans		Rc
	1,100			20 BD	Bf
b. Oil Base	3,600			70 BD	Bf
c. Mixed		34,000		165 LP	D
d. Solids		390		13 BD	Bf
		20,400		51 BD	D
3. Solvents thinners, and stains	1,700			32 BD	Bf
		400		2 BD	D
4. Gasoline and oil (mixed)					
5. Aerosols (excluding pesticides/ herbicides)		6,800		34 LP	T-1
6. Other					
FLAMMABLE SUBTOTAL	15,282	61,990		188 BD/199 LP	

Management Methods		
Ru Re-used	Tr Transfer Station	T-3 Stabilization
Rc Recycle	T-1 Incinerator	D Land Disposal
Bf Blended Fuel	T-2 Aqueous Treatment	Other

Waste Category	Gallons	Pounds	Number of Containers	Number of Drums (55 gal)	Management Method
B. Pesticides					
Such as herbicides, insecticides, fungicides, etc.		25,000		80 LP	D
PESTICIDE SUBTOTAL		25,000		80 LP	
C. Corrosives					
1. Acids					
a. Oxidizing		2,000		10 LP	D
b. Non-Oxidizing					
2. Alkaline		200		1 LP	T-2
		1,800		8 LP	D
CORROSIVES SUBTOTAL		4,000		9 LP	
D. Oxidizers					
Excluding acids		640		5 LP	T-2
OXIDIZERS SUBTOTAL		640		5 LP	
E. Miscellaneous					
1. Car Batteries		4,800			Rc
2. Mercury		40		1 LP	Rc
3. Other		7,300		18 BD	D
		20,200		72 LP	D
		40		2 LP	T-2
MISC. SUBTOTAL		32,160		18 BD/75 LP	
TOTAL WASTE COLLECTED	15,282	123,810		206 BD/378 LP	

HOUSEHOLD HAZARDOUS WASTE COLLECTION INFORMATION

CIWMB-303 (1/90)

May 5, 1990, Long Beach Veterans Stadium - Safety Specialists, Inc. - 3,116 vehicles served

Name of Local Agency:

Phone:

County Sanitation Districts of LA County, Joseph D. Heilly

(213) 899-7411

Los Angeles County Department of Public Works, Brian D. Hooper

(818) 458-5118

Address:

City:

County:

State:

Zip:

1955-Workman Mill Road

Whittier

Los Angeles

California

90607-4998

900-S. Fremont Ave. 7th floor

Alhambra

Los Angeles

California

91802-1460

(Please Use Applicable Units of Measurement)

Waste Category	Gallons	Pounds	Number of Containers	Number of Drums (55 gal)	Management Method
A. Flammable					
1. Used Oil	4,400		3 tank trucks		Rc
2. Paints					
a. Latex	8,720		paint cans		Rc
	1,100			22 BD	Bf
b. Oil Base	4,650			93 BD	Bf
c. Mixed		82,875		255 LP	D
d. Solids		42,425		108 BD	D
3. Solvents thinners, and stains	2,150			43 BD	Bf
		225		9 BD	Bf
		2,275		7 LP	D
4. Gasoline and oil (mixed)					
5. Aerosols (excluding pesticides/ herbicides)		8,700		58 LP	T-1
6. Other					
FLAMMABLE SUBTOTAL	19,020	136,500		275 BD/320 LP	

Management Methods		
Ru Re-used	Tr Transfer Station	T-3 Stabilization
Rc Recycle	T-1 Incinerator	D Land Disposal
Bf Blended Fuel	T-2 Aqueous Treatment	Other

Waste Category	Gallons	Pounds	Number of Containers	Number of Drums (55 gal)	Management Method
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B. Pesticides

Such as
herbicides,
insecticides,
fungicides, etc.

32,010

98 LP

D

PESTICIDE
SUBTOTAL

32,010

98 LP

C. Corrosives

1. Acids

a. Oxidizing

4,550

14 LP

D

b. Non-
Oxidizing

2. Alkaline

5,200

18 LP

D

20

1 LP

T-1

CORROSIVES
SUBTOTAL

9,770

31 LP

D. Oxidizers

Excluding acids

340

3 LP

D

OXIDIZERS
SUBTOTAL

70

2 LP

T-2

410

5 LP

E. Miscellaneous

1. Car Batteries

9,600

Rc

2. Mercury

30

1 LP

Rc

3. Other

10

1 LP

T-1

900

3 BD

D

25,075

77 LP

D

MISC.
SUBTOTAL

35,615

3 BD/79 LP

TOTAL WASTE
COLLECTED

19,020

214,305

278 BD/533 LP

HOUSEHOLD HAZARDOUS WASTE COLLECTION INFORMATION

CIWMB-303 (1/90)

April 28, 1990, Rose Bowl, Pasadena - Safety Specialists, Inc. - 4,202 vehicles served

Name of Local Agency:

County Sanitation Districts of LA County, Joseph D. Reilly

Phone:

(213) 899-7411

Los Angeles County Department of Public Works, Brian D. Hooper

(818) 458-5118

Address:

City:

County:

State:

Zip:

1955 Workman Mill Road

Whittier

Los Angeles

California

90607-4998

900 S. Fremont Ave. 7th floor

Alhambra

Los Angeles

California

91802-1450

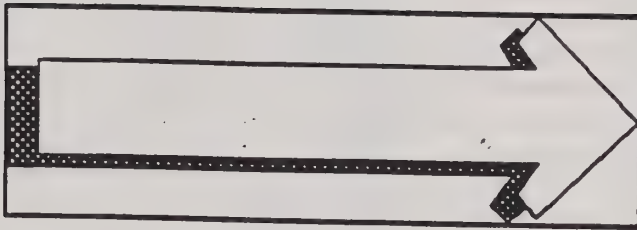
(Please Use Applicable Units of Measurement)

Waste Category	Gallons	Pounds	Number of Containers	Number of Drums (55 gal)	Management Method
A. Flammable					
1. Used Oil	5,475		6 tank trucks		Rc
2. Paints					
a. Latex	6,200		paint cans		Rc
	1,400			28 BD	Bf
b. Oil Base	5,000			100 BD	Bf
c. Mixed		92,575		273 LP	D
d. Solids		49,600		143 BD	D
3. Solvents thinners, and stains	2,150	4,925		44 BD 15 BD	Bf D
4. Gasoline and oil (mixed)					
5. Aerosols (excluding pesticides/ herbicides)		10,180		53 LP	T-1
6. Other					
FLAMMABLE SUBTOTAL	20,225	157,280		330 BD/326 LP	

Management Methods		
Ru Re-used	Tr Transfer Station	T-3 Stabilization
Rc Recycle	T-1 Incinerator	D Land Disposal
Bf Blended Fuel	T-2 Aqueous Treatment	Other

Waste Category	Gallons	Pounds	Number of Containers	Number of Drums (55 gal)	Management Method
B. Pesticides					
Such as herbicides, insecticides, fungicides, etc.		49,775		149 LP	D
PESTICIDE SUBTOTAL		49,775		149 LP	
C. Corrosives					
1. Acids					
a. Oxidizing		4,975		17 LP	D
b. Non-Oxidizing					
2. Alkaline		5,200		18 LP	D
CORROSIVES SUBTOTAL		10,175		35 LP	
D. Oxidizers					
Excluding acids		900		3 LP	T-1
OXIDIZERS SUBTOTAL		900		3 LP	
E. Miscellaneous					
1. Car Batteries		11,000			Rc
2. Mercury					
3. Other	20			4(5gal) LP	T-1
	50			1 BD	T-2
		15		3(5gal) LP	T-1
		32,325		101 LP	D
		3,575		11 BD	D
MISC. SUBTOTAL	70	46,915		7(5gal) LP	
				12 BD/101 LP	
TOTAL WASTE COLLECTED	20,295	265,045		7(5gal) LP	
				342 BD/812 LP	

LOS ANGELES COUNTY



**USED OIL
RECYCLERS**

**PREPARED BY THE COUNTY SANITATION DISTRICTS
OF LOS ANGELES COUNTY**

JANUARY 26, 1991

OIL RECYCLERS - LOS ANGELES COUNTY - JANUARY 1991

PAGE ONE

ZIP	CITY	COMPANY NAME	ADDRESS	PHONE
90003	LOS ANGELES	PEP BOYS	200 W MANCHESTER BLVD	(213) 750-2500
90004	LOS ANGELES	PETTY'S SERVICE	4700 BEVERLY BLVD	(213) 462-5061
90015	LOS ANGELES	PEP BOYS	1200 W WASHINGTON BLVD	(213) 749-1594
90016	LOS ANGELES	PEP BOYS	2800 CRENSHAW BLVD	(213) 734-3838
90021	LOS ANGELES	CHIEF AUTO PARTS	8522 WESTERN, #C	(213) 753-9032
90022	COMMERCE	PEP BOYS	256 S ATLANTIC BLVD	(213) 722-1000
90022	COMMERCE	CHEVRON	6150 TELEGRAPH RD	(213) 722-0136
90026	LOS ANGELES	CHIEF AUTO PARTS	2202 SUNSET BLVD	(213) 413-3511
90026	LOS ANGELES	CHIEF AUTO PARTS	1515 HILLHURST	(213) 663-3108
90028	LOS ANGELES	PEP BOYS	6125 HOLLYWOOD BLVD	(213) 468-1195
90031	LOS ANGELES	CARDENAS SERVICE	2829 N MAIN ST	(213) 221-3501
90033	EAST LOS ANGELES	CHIEF AUTO PARTS	1955 BROOKLYN AVE	(213) 663-3108
90036	LOS ANGELES	CHEVRON	7020 BEVERLY BLVD	(213) 931-4272
90044	LOS ANGELES	PEP BOYS	5801 S VERMONT	(213) 753-2000
90049	LOS ANGELES	SHELL	800 N SEPULVEDA	(213) 476-1979
90064	WEST LOS ANGELES	UNOCAL	12100 OLYMPIC BLVD	(213) 477-3205
90064	WEST LOS ANGELES	CHEVRON	10830 NATIONAL BLVD	(213) 475-3125
90064	WEST LOS ANGELES	PEP BOYS	10644 W PICO BLVD	(213) 836-6622
90210	BEVERLY HILLS	UNOCAL	9988 WILSHIRE BLVD	(213) 276-3076
90221	COMPTON	PEP BOYS	1721 N LONG BEACH BLVD	(213) 639-5100
90230	CULVER CITY	UNOCAL	11203 WASHINGTON PL	(213) 398-9378
90240	DOWNEY	MIKE'S SERVICE	9000 E TELEGRAPH RD	(213) 861-1617
90241	DOWNEY	PEP BOYS	10231 LAKEWOOD BLVD	(213) 861-9900
90245	EL SEGUNDO	CHEVRON	232 MAIN ST	(213) 322-2614
90250	HAWTHORNE	GOODYEAR	13315 HAWTHORNE BLVD	(213) 675-1155
90255	HUNTINGTON PARK	PEP BOYS	2671 RANDOLPH ST	(213) 583-6855
90265	MALIBU	CHEVRON	23614 PCH	(213) 456-2555
90274	ROLLING HILLS	PALOS VERDES RECYCLE	26401 CRENSHAW BLVD	(213) 375-6094
90278	REDONDO BEACH	WESTERN WASTE RECYCLE	2420 COMPTON BLVD	(213) 374-4006
90278	REDONDO BEACH	CHIEF AUTO PARTS	224 PROSPECT	(213) 316-3434
90278	REDONDO BEACH	WESTERN WASTE RECYCLE	2420 MARINE	(213) 374-4006
90301	INGLEWOOD	PEP BOYS	200 E SPRUCE AVE	(213) 678-2255
90302	INGLEWOOD	CHEVRON	1300 CENTINELA AVE	(213) 677-6548
90403	SANTA MONICA	CHEVRON	432 WILSHIRE BLVD	(213) 394-4565
90404	SANTA MONICA	SANTA MONICA RECYCLE	1 RECYCLE WAY	(213) 828-0226
90404	SANTA MONICA	EXXON	3223 SANTA MONICA BLVD	(213) 828-3883
90404	SANTA MONICA	SANTA MONICA HHW	2500 MICHIGAN AVE	(213) 458-8526
90405	SANTA MONICA	TEXACO	1410 PICO	(213) 452-9967
90405	SANTA MONICA	CHIEF AUTO PARTS	2606-08 PICO BLVD	(213) 450-2555
90504	TORRANCE	CHIEF AUTO PARTS	2207 ARTESIA BLVD	(213) 327-3419
90505	TORRANCE	PEP BOYS	3124 SEPULVEDA BLVD	(213) 326-3002
90601	WHITTIER	PUENTE HILLS RECYCLE	2800 S WORKMAN MILL RD	(213) 692-3531
90601	WHITTIER	EDDIE'S CHEVRON	11403 E. WHITTIER BLVD	(213) 692-4966
90604	WHITTIER	CHIEF AUTO PARTS	14953 LEFFINGWELL	(213) 946-4475
90638	LA MIRADA	PEP BOYS	14207 VALLEY VIEW	(213) 944-6437
90638	LA MIRADA	PAT'S SERVICE CENTER	14155 E IMPERIAL HWY	(213) 944-7211
90650	NORWALK	CHEVRON	10967 ALONDRA BLVD	(213) 868-4540
90650	NORWALK	CHEVRON	12155 E IMPERIAL HWY	(213) 863-4488
90650	NORWALK	ARCO	10602 E IMPERIAL HWY	(213) 864-5522
90660	PICO RIVERA	UNOCAL	6749 S ROSEMEAD	(213) 949-7443
90670	SANTA FE SPRINGS	CHEVRON	11426 E TELEGRAPH	(213) 868-7618

ALWAYS CALL COMPANY FIRST TO VERIFY AVAILABILITY, LIMITS, AND COST (IF ANY)

OIL RECYCLERS - LOS ANGELES COUNTY - JANUARY 1991

PAGE TWO

ZIP	CITY	COMPANY NAME	ADDRESS	PHONE
90701	ARTESIA	PEP BOYS	11944 SOUTH ST	(213) 402-1987
90701	CERRITOS	PUAL'S SHELL SERVICE	13359 SOUTH ST	(714) 995-6492
90706	BELLFLOWER	PEP BOYS	8533 ARTESIA BLVD	(213) 630-8985
90706	BELLFLOWER	ARCO	9754 E ROSECRANS	(213) 867-9051
90706	BELLFLOWER	UNOCAL	14302 BELLFLOWER BLVD	(213) 825-2117
90712	LAKEWOOD	KEN'S SERVICE	2626 DEL AMO	(213) 428-4989
90717	LOMITA	CHEVRON	1975 W LOMITA BLVD	(213) 328-1043
90744	CARSON	PEP BOYS	810 E DOMINGUEZ ST	(213) 532-3781
90745	CARSON	CHIEF AUTO PARTS	23405-07 MAIN ST	(213) 518-4230
90746	CARSON	ART PAUL'S SERVICE	20240 S AVALON BLVD	(213) 532-2566
90746	CARSON	PETROLEUM RECYCLING	16604 S SAN PEDRO	(213) 532-7909
90805	LONG BEACH	CHIEF AUTO PARTS	240 W ANAHEIM	(213) 432-2751
90805	LONG BEACH	ALLENS UNION 76	3495 E SOUTH ST	(213) 630-4682
90806	SIGNAL HILL	PETROLEUM RECYCLING	1835 E 29TH ST	(213) 595-7431
90806	LONG BEACH	CHIEF AUTO PARTS	2594 SANTA FE	(213) 492-6860
90806	LONG BEACH	CHEVRON	3405 LAKEWOOD BLVD	(213) 429-3929
90806	LONG BEACH	ARCO	4161 BELLFLOWER BLVD	(213) 425-2618
90813	LONG BEACH	CROSBY & OVERTON	1620 W 16TH ST	(213) 432-5445
90814	LONG BEACH	COLLEGE UNION	676 TERMINO AVE	(213) 438-5347
90815	LONG BEACH	CHEVRON	2610 LAKEWOOD BLVD	(213) 494-3562
91001	ALTADENA	CHEVRON	907 E ALTADENA DR	(818) 797-9221
91006	ARCADIA	ARCADIA CHEVRON	11 E LIVE OAK	(818) 446-6659
91006	ARCADIA	CHIEF AUTO PARTS	1451 BALDWIN	(818) 446-4463
91006	ARCADIA	MOBIL	210 E LIVE OAK AVE	(818) 446-6979
91006	ARCADIA	TEXACO	900 W DUARTE	(818) 445-2206
91006	ARCADIA	UNION	102 E DUARTE RD	(818) 445-8101
91011	LA CANADA	CHEVRON	623 FOOTHILL BLVD	(818) 790-2132
91030	SOUTH PASADENA	S PASADENA RECYCLE	600 STONEY DR	(818) 799-0041
91040	SUNLAND	TEXACO	8505 FOOTHILL	(818) 352-4736
91101	PASADENA	CHEVRON	666 N LAKE AVE	(818) 796-0714
91105	PASADENA	PEP BOYS	1135 E COLORADO BLVD	(818) 783-8181
91108	SAN MARINO	UNOCAL	2390 HUNTINGTON DRIVE	(818) 286-6030
91205	GLENDALE	CHIEF AUTO PARTS	800 S GLENDALE AVE	(818) 856-7568
91206	GLENDALE	CHEVRON	334 N BERDUGO	(818) 956-9058
91302	CALABASAS	UNOCAL	24115 CALABASAS RD	(818) 888-7640
91302	CALABASAS	CHEVRON	4807 LAS VIRGENES RD	(818) 880-6311
91304	WEST HILLS	CHEVRON	7607 WOODLAKE AVE	(818) 340-9938
91335	RESEDA	PEP BOYS	7340 RESEDA BLVD	(818) 708-7173
91340	SAN FERNANDO	PEP BOYS	1231 SAN FERNANDO RD	(818) 898-1491
91343	SEPULVEDA	CHEVRON	8301 SEPULVEDA BLVD	(818) 892-9095
91344	GRANADA HILLS	UNION TIRE & SERVICE	11062 BALBOA BLVD	(818) 363-2668
91344	GRANADA HILLS	UNOCAL	17000 RINALDI	(818) 360-7606
91344	GRANADA HILLS	CHEVRON	11840 BALBOA BLVD	(818) 363-1031
91345	MISSION HILLS	UNOCAL	11109 SEPULVEDA BLVD	(818) 365-2011
91352	SUN VALLEY	MOBIL	8360 SUNLAND BLVD	(818) 768-3233
91355	CANYON COUNTRY	CHEVRON	19266 SOLEDAD CANYON RD	(805) 252-3182
91364	WOODLAND HILLS	TEXACO	5314 TOPANGA CANYON RD	(818) 883-3525
91367	WOODLAND HILLS	CHEVRON	6061 TOPANGA CANYON RD	(818) 883-2121
91405	VAN NUYS	PEP BOYS	7650 VAN NUYS BLVD	(818) 787-5300
91406	VAN NUYS	MOBIL	15303 SHERMAN WAY	(818) 997-8928
91502	BURBANK	PEP BOYS	254 W OLIVE	(818) 845-3555

ALWAYS CALL COMPANY FIRST TO VERIFY AVAILABILITY, LIMITS, AND COST (IF ANY)

OIL RECYCLERS - LOS ANGELES COUNTY - JANUARY 1991

				PAGE THREE
ZIP	CITY	COMPANY NAME	ADDRESS	PHONE
91502	BURBANK	BURBANK RECYCLE	720 N LAKE STREET	(818) 841-9700
91601	NORTH HOLLYWOOD	PEP BOYS	5356 LANKERSHIM	(818) 980-2900
91606	NORTH HOLLYWOOD	MR. TRANSMISSION	11410 VICTORY BLVD	(818) 985-5002
91702	AZUSA	PEP BOYS	123 E GLADSTONE	(818) 989-7608
91722	COVINA	CHIEF AUTO PARTS	1269 SAN BERNARDINO ST	(818) 967-0584
91732	EL MONTE	PEP BOYS	11937 E VALLEY BLVD	(818) 410-0404
91732	EL MONTE	TEXACO	11860 VALLEY BLVD	(818) 575-8081
91733	SOUTH EL MONTE	UNOCAL	9408 RUSH ST	(818) 443-4077
91745	HACIENDA HEIGHTS	CHEVRON	2321 S HACIENDA BLVD	(818) 961-4035
91745	HACIENDA HEIGHTS	MOBILE	18404 E COLIMA RD	(818) 330-4329
91746	LA PUENTE	TEXACO	14562 E VALLEY	(818) 810-2084
91746	LA PUENTE	EXXON	18303 E COLIMA RD	(818) 810-2084
91748	ROWLAND HEIGHTS	EXXON	19005 E COLIMA	(818) 984-8999
91766	POMONA	PEP BOYS	336 E HOLT AVE	(714) 623-3476
91767	POMONA	SHELL	2295 N GAREY AVE	(714) 593-8720
91768	POMONA	UNOCAL	1212 N WHITE STAR AVE	(714) 629-6589
91770	ROSEMEAD	UNOCAL	8959 E VALLEY BLVD	(818) 285-8188
91733	SAN DIMAS	UNOCAL	1790 DAN DIMAS AVE	(714) 582-2010
91776	SAN GABRIEL	UNOCAL	101 E LAS TUNAS	(818) 287-3035
91780	TEMPLE CITY	CHEVRON	9425 LAS TUNAS	(818) 287-3630
91790	WEST COVINA	CHEVRON	1209 S SUNSET AVE	(818) 338-6527
91790	WEST COVINA	SAN LUIS SERVICE STN.	550 S GLENDORA AVE	(818) 962-4737
91791	WEST COVINA	UNOCAL	123 N GRAND AVE	(818) 968-8211
91792	WEST COVINA	PEP BOYS	1540 E AMAR RD	(818) 810-9936
93065	SIMI VALLEY	PEP BOYS	660 E LOS ANGELES	(818) 522-4002
93534	LANCASTER	PEP BOYS	44229 20TH ST W	(805) 945-9408

ALWAYS CALL COMPANY FIRST TO VERIFY AVAILABILITY, LIMITS, AND COST (IF ANY)

L:\OIL-BATT\OILZIP91 1/26/91 JR

APPENDIX C

LOS ANGELES USED OIL RECYCLERS

**INITIAL STUDY
AND ENVIRONMENTAL ASSESSMENT
FOR THE SOUTHEAST CITIES
SOURCE REDUCTION AND RECYCLING ELEMENT
AND HOUSEHOLD HAZARDOUS WASTE ELEMENT
OCTOBER 1991**

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SECTION 1 INTRODUCTION

PURPOSE

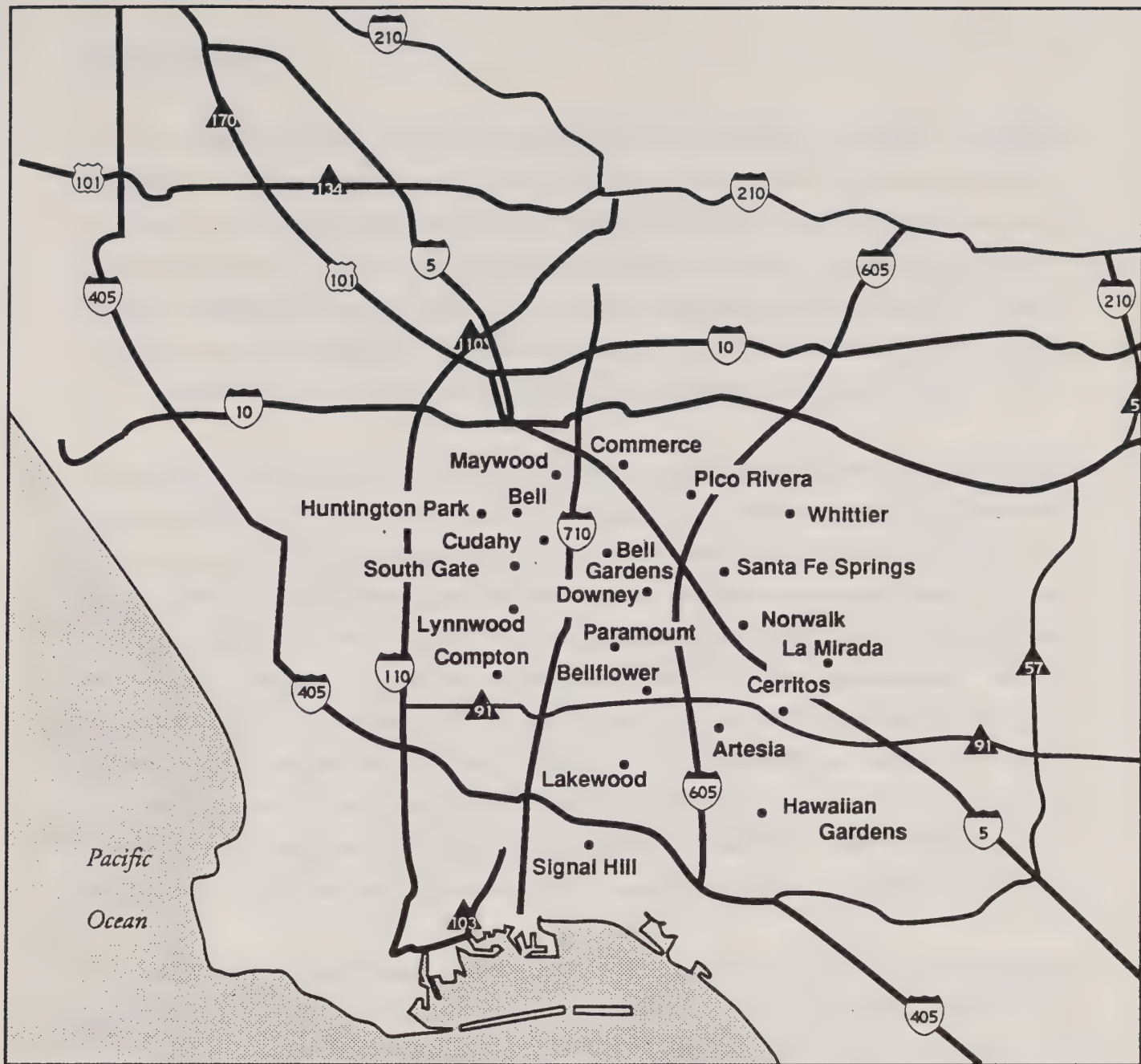
This Initial Study (IS) has been prepared in conformance with Section 15063 of the State Guidelines for the California Environmental Quality Act (CEQA) to determine whether the proposed Source Reduction and Recycling Element (SRRE) and Household Hazardous Waste Element (HHWE) for the Southeast Cities would pose adverse environmental effects.

The intent and purpose of Assembly Bill (AB) 939, under which these elements have been recommended, is to require county and city jurisdictions to prepare elements that will propose programs to substantially reduce amounts of waste generated by their citizens. These programs, as proposed, are preliminary in nature and do not detail how each selected alternative would be designed and implemented. Upon subsequent development of these programs, it may be determined that they are considered a "project" under CEQA requirements and that they require further environmental documentation. Given that the alternatives are preliminary in nature, this document should act as a scoping tool; and information obtained in the public hearing process should be used to determine whether there are additional environmental considerations.

This section provides a description of the location and the characteristics of the proposed projects. Section 2 includes an environmental checklist that gives an overview of the potential impacts that may or may not result from project implementation. Section 3 elaborates on the information contained in the environmental checklist and identifies measures to eliminate potential significant impacts, or to reduce them to levels that are less than significant.

LOCATION

The cities and unincorporated county areas for which this initial study is being prepared are located in the southeast portion of Los Angeles County. This group of cities has formed the Southeast Area Integrated Waste Management Working Group which includes the cities of Artesia, Bell, Bell Gardens, Bellflower, Cerritos, Commerce, Compton, Cudahy, Downey, Hawaiian Gardens, Huntington Park, La Mirada, Lakewood, Lynwood, Maywood, Norwalk, Paramount, Pico Rivera, Santa Fe Springs, Signal Hill, South Gate, Whittier, and unincorporated Los Angeles County (See Exhibit 1, Regional Location Map.)



Source: The Thomas Guide, Los Angeles and Orange Counties, 1989 Edition

LOCATION MAP SOUTHEAST CITIES LOS ANGELES COUNTY



DESCRIPTION

The Southeast Cities SRRE and HHWE were developed in response to AB 939, the California Integrated Waste Management Act of 1989. AB 939 requires every city and county in the State to prepare an SRRE that identifies how its jurisdiction will meet the mandatory waste diversion goals (25 percent by 1995 and 50 percent by 2000) set by the State. These SRR and HHW elements identify how the Southeast Cities will achieve these goals. Upon review and adoption of this plan by each city, the SRR and HHW elements will be submitted to Los Angeles County for incorporation into the Countywide Integrated Waste Management Plan (IWMP).

The purpose of the SRRE is to examine all possible programs that may provide each city with alternatives that would allow each city to meet mandatory waste diversion goals. The alternatives listed below are all of the alternatives that were discussed in each city SRRE and HHWE. Many of the cities within the Southeast Area have implemented individual waste management and source reduction programs. Several cities have implemented municipal recycling facility or special waste recycling programs (i.e. used tires, demolition waste). The City of Commerce, in connection with the County Sanitation Districts of L.A. County, has a Waste-to-Energy Facility which is in operation processing municipal waste. Within the City of Paramount, Metropolitan Waste Disposal operates the Paramount Resource Recovery Facility. The City of South Gate has an existing waste transfer station and the City of Whittier has a landfill. These separate programs are currently in operation and the associated environmental impacts are not covered by this study.

This document is a multijurisdictional initial study. Each alternative proposed for every SRRE is described below. The description includes the names of the cities for which the alternative has been recommended. The alternatives are listed numerically for easy reference to the environmental checklist and associated discussion. (These numbers do not reflect the numerical system used in the SRRE and HHWE.)

SOURCE REDUCTION AND RECYCLING ELEMENT

Source Reduction Programs

- Alternative 1--Local Waste Disposal Fee Modifications. The tipping fee at landfills and waste-to-energy facilities can be raised to reflect the true cost of disposal. Differential rates can be set for recyclables and non-recyclables.

Assuming that the economic mechanisms are in place, local waste disposal fee modifications cause generators to internalize the true costs of disposal.

This alternative was selected by Artesia, Bell, Bell Gardens, Bellflower, Cerritos, Compton, Cudahy, Downey, Hawaiian Gardens, Huntington Park, La Mirada, Lakewood, Lynwood, Maywood, Norwalk, Paramount, Pico Rivera, Santa Fe Springs, Signal Hill, South Gate, and Whittier.

- Alternative 2--Quantity-Based Local User Fees. Quantity-based local user fees are a rate structure in which generators pay for garbage collection according to the quantities they set out for collection. The rate structure provides a direct incentive for every generator to reduce the amount of waste disposed, through source reduction, recycling, and composting. In such situations, program performance (public participation) becomes cost-driven, rather than convenience-driven.

This alternative was selected by Artesia, Bell, Bell Gardens, Bellflower, Cerritos, Compton, Downey, Hawaiian Gardens, Huntington Park, La Mirada, Lakewood, Lynwood, Maywood, Norwalk, Paramount, Pico Rivera, Santa Fe Springs, Signal Hill, South Gate, and Whittier.

- Alternative 3--Loans, Grants, and Loan Guarantees. A jurisdiction can help generators with grants, loans and loan guarantees for equipment and other capital expenditures that will allow them to start source reduction programs.

Although discussed, this alternative was not selected by any of the jurisdictions.

- Alternative 4--Deposits, Refunds, and Rebates. A jurisdiction can help generators with grants, loans, and loan guarantees for equipment and other capital expenditures that will allow them to start source reduction projects.

Although discussed, this alternative was not selected by any of the jurisdictions.

- Alternative 5--Business License Fees. Businesses that implement source reduction programs may qualify for reduced business license fees. Conversely, those businesses that do not develop source reduction programs may be fined.

Although discussed, this alternative was not selected by any of the jurisdictions.

- Alternative 6--Local Taxes, Fees, and Fines. Tax incentives and disincentives can be applied to encourage or discourage a wide range of desired or undesired products and services. One significant tax is the advanced disposal fee. Fines do not stand on their own as an independent alternative, as they are a method of enforcing regulatory programs.

Although discussed, this alternative was not selected by any of the jurisdictions.

- Alternative 7--Waste Evaluations. Waste evaluations are one of the most common forms of government assistance to non-residential generators. Most waste evaluations involve a trained waste auditor who tours businesses and gathers information on the amounts and types of waste produced; the amounts, types, and qualities of recyclables in the waste stream; and companies' internal

waste handling processes. This is usually followed by a recommendation of source reduction and recycling actions.

This alternative was selected by Santa Fe Springs and Pico Rivera.

- Alternative 8--Assistance with Onsite Composting and Mulching Activities. Technical and/or financial assistance can be provided to assist generators of organic waste in implementing onsite composting programs. The jurisdiction can also promote and assist the mulching of grass clippings and woody debris.

This alternative was selected by Artesia, Bell, Bell Gardens, Bellflower, Compton, Cudahy, Downey, Hawaiian Gardens, La Mirada, Lakewood, Lynwood, Norwalk, Paramount, Pico Rivera, Signal Hill, South Gate, and Whittier.

- Alternative 9--Technical Assistance to Business and Industry, and Consumer Organizations. Local government staff would assist businesses and organizations by sharing research findings, experience, and technical knowledge.

This alternative was selected by Artesia, Bell, Bell Gardens, Bellflower, Cerritos, Compton, Cudahy, Downey, Hawaiian Gardens, Huntington Park, La Mirada, Lakewood, Lynwood, Maywood, Norwalk, Paramount, Pico Rivera, Santa Fe Springs, Signal Hill, South Gate, and Whittier.

- Alternative 10--Educational Efforts. The primary mechanism for eliciting source reduction is education and promotion aimed at making changes in the production of goods, packaging design, and consumer buying practices. Consumer awareness programs, school curricula development, seminars, and public forums are ways in which educational programs can be presented. The targeted audiences are product designers, manufacturers, retailers, and individual and business consumers.

This alternative was selected by Artesia, Bell, Bell Gardens, Bellflower, Cerritos, Compton, Cudahy, Downey, Hawaiian Gardens, Huntington Park, La Mirada, Lakewood, Lynwood, Maywood, Norwalk, Paramount, Pico Rivera, Santa Fe Springs, Signal Hill, South Gate, and Whittier.

- Alternative 11--Awards and Public Recognition. This program would provide awards to businesses and organizations, acknowledging their achievements for source reduction activities.

Although discussed, this alternative was not selected any of the jurisdictions.

- Alternative 12--Non-Procurement Source Reduction Activities. Non-procurement source reduction includes programs such as education of employees, office changes to increase the use of scrap paper, increased use of electronic mail, sharing subscriptions, routing, and increased use of duplex copying.

This alternative was selected by Artesia, Bell, Bell Gardens, Bellflower, Cerritos, Compton, Cudahy, Downey, Hawaiian Gardens, Huntington Park, La Mirada, Lakewood, Lynwood, Maywood, Norwalk, Paramount, Pico Rivera, Santa Fe Springs, Signal Hill, South Gate, and Whittier.

- Alternative 13--Demonstration Programs. Demonstration programs are model source reduction programs that can be observed by public and private sectors. Displays can demonstrate a variety of source reduction options, from onsite composting operations to restaurant dishwashing machines. Demonstration programs can be used in support of other source reduction alternatives, including assistance with onsite composting and mulching activities; and technical assistance to businesses, industry, and consumer organizations.

This alternative was selected by Artesia, Bell, Bell Gardens, Bellflower, Cerritos, Compton, Cudahy, Downey, Hawaiian Gardens, Huntington Park, La Mirada, Lakewood, Lynwood, Maywood, Norwalk, Paramount, Pico Rivera, Santa Fe Springs, Signal Hill, South Gate, and Whittier.

- Alternative 14--Government Procurement Ordinances. This measure would include the adoption of ordinances that specify durability and recyclability as purchasing considerations.

This alternative was selected by Artesia, Bell, Bell Gardens, Bellflower, Cerritos, Compton, Cudahy, Downey, Hawaiian Gardens, Huntington Park, La Mirada, Lakewood, Lynwood, Maywood, Norwalk, Paramount, Pico Rivera, Signal Hill, South Gate, and Whittier.

- Alternative 15--Incentives for Land Use Practices that Promote Source Reduction. To the extent that specific land use practices relate to the generation and disposal of waste, the jurisdiction may promote source reduction through regulations, incentives, education, and technical assistance.

This alternative was selected by Artesia, Bell, Bell Gardens, Bellflower, Cerritos, Compton, Downey, Hawaiian Gardens, La Mirada, Lakewood, Lynwood, Norwalk, Paramount, Pico Rivera, Signal Hill, South Gate, and Whittier.

- Alternative 16--Required Waste Reduction Planning by Non-Residential Generators. This measure would require or request businesses to submit source reduction and recycling plans to their local jurisdictions. Such plans can lead businesses in the direction of analyzing their waste streams and discovering methods of saving money and improving their corporate citizenships through implementing source reduction and recycling programs.

This alternative was selected by Pico Rivera.

- Alternative 17--Product and Packaging Bans. This measure would allow banning of specific products, as well as specific materials to reduce specific sources of waste.

Although discussed, this alternative was not selected by any of the jurisdictions.

Recycling Programs

- Alternative 18--Curbside Collection of Separated Materials. Curbside collection is the scheduled collection of separated recyclable materials that have been set out at households.

This alternative was selected by Bell, Bell Gardens, Bellflower, Cerritos, Commerce, Compton, Downey, Hawaiian Gardens, La Mirada, Lakewood, Lynwood, Norwalk, Paramount, Pico Rivera, Signal Hill, South Gate, and Whittier.

- Alternative 19--At-Source Separation, and Collection of Recyclables. This program involves recyclable materials that are generated as wastes from non-residential sources and that can be separated and collected for transport to recyclable processing and marketing facilities.

This alternative was selected by Artesia, Bell, Bell Gardens, Bellflower, Cerritos, Commerce, Compton, Cudahy, Downey, Hawaiian Gardens, Huntington Park, La Mirada, Lakewood, Lynwood, Maywood, Norwalk, Paramount, Pico Rivera, Santa Fe Springs, Signal Hill, South Gate, and Whittier.

- Alternative 20--Mobile/Stationary Buy-Back Centers. The buy-back recycling center measure is a commercially located, staffed recycling facility that purchases small amounts of post-consumer secondary materials from the public. Buy-back centers typically buy aluminum cans; they may also handle glass containers and newspaper.

This alternative was selected by Artesia, Bell, Bell Gardens, Cerritos, Cudahy, Downey, Hawaiian Gardens, Huntington Park, La Mirada, Lakewood, Lynwood, Maywood, Norwalk, Pico Rivera, Santa Fe Springs, South Gate, and Whittier.

- Alternative 21--Mobile/Stationary Drop-Off Centers. A drop-off center is a recycling collection facility where citizens can voluntarily deliver separated secondary materials, such as newspaper, glass containers, and metal cans.

This alternative was selected by Artesia, Bell, Bell Gardens, Cerritos, Cudahy, Downey, Hawaiian Gardens, Huntington Park, La Mirada, Lynwood, Maywood, Norwalk, Pico Rivera, Santa Fe Springs, and South Gate.

- Alternative 22--Multi-Family Collection. This measure would involve the collection of household recyclables from multi-family structures/developments. It is an alternative to curbside collection; trash is placed in common area bins or dumpsters, rather than in individual receptacles for each unit.

This alternative was selected by Bell, Bell Gardens, Bellflower, Cerritos, Commerce, Downey, Hawaiian Gardens, La Mirada, Lakewood, Lynwood, Norwalk, Paramount, Pico Rivera, Signal Hill, South Gate, and Whittier.

- Alternative 23--Manual Materials Recovery Operations. This measure would involve the separation of marketable recyclable materials, such as newspapers, mixed glass, metal, and plastic containers, and the processing of those materials for sale to end users. This type of operation is often conducted near a solid waste facility, such as a landfill or transfer station, where the non-recovered material can be cleared for disposal.

This alternative was selected by Artesia, Bell, Bell Gardens, Bellflower, Cerritos, Commerce, Compton, Lakewood, Norwalk, Pico Rivera, Santa Fe Springs, and South Gate.

- Alternative 24--Mechanized Materials Recovery Operations. This measure would involve the separation of marketable recyclable materials such as newspapers, mixed glass, metal, and plastic containers, and process the materials for sale to end users. The facility receives waste directly from residential collection vehicles and commercial waste vehicles that collect certain recyclable safe commercial waste. The vehicles proceed to a tipping area, generally an enclosed concrete pad, and the load is dumped for processing.

This alternative was selected by Artesia, Bell, Bell Gardens, Bellflower, Commerce, Compton, Cudahy, Huntington Park, Lakewood, Maywood, Pico Rivera, Santa Fe Springs, and Whittier.

- Alternative 25--Salvage at Solid Waste Facilities. This measure involves the sort-and-pick system, where people can separate recyclables into bins.

Although discussed, this alternative was not selected by any of the jurisdictions.

- Alternative 26--At-Source Processing. This measure would allow some non-residential generators to ship separated recyclable materials directly to end users or through regional brokers without the need for intermediate offsite processing or special hauler collection routes.

Although discussed, this alternative was not selected by any of the jurisdictions.

- Alternative 27--Mandatory Materials Separation Ordinance. This measure would require that residential and commercial generators separate their recyclables from their garbage.

This alternative was selected by Bellflower, Compton, Lakewood, and Paramount.

- Alternative 28--Ban on Disposal of Designated Recyclables. If a jurisdiction has control of its disposal site, it can ban the disposal of certain recyclables, or of loads with more than a certain percentage of recyclables. Even if the jurisdiction does not have control of the disposal site, it can lobby the responsible agency to institute the appropriate bans.

This alternative was selected by Lakewood.

- Alternative 29--Policy on Scavenging. In this policy's most restrictive form, anything set out at the curb belongs to the jurisdiction, and scavenging is prohibited.

This alternative was selected by all cities except for Downey, La Mirada, Maywood, Santa Fe Springs, and Signal Hill.

- Alternative 30--Zoning Code Practices. Zone code changes would define the conditions and permit procedures for different types of development within a jurisdiction.

This alternative was selected by Downey, Lakewood, Pico Rivera, and Signal Hill.

- Alternative 31--Building Code Changes. One common barrier to separating recyclables is inconvenience and lack of space. Building codes or guidelines can address this problem at the source, before a building is constructed, to help make recycling behavior and collection mechanisms an integral part of the work or dwelling place. Building codes can be revised to require that new commercial and multi-family developments include space for recycling.

This alternative was selected by Compton.

- Alternative 32--Business Permit Requirements. This measure would encourage recycling by attaching stipulations to the acquisition of business licenses.

This alternative was selected by all of the cities except for Bellflower, Compton, Cudahy, Lakewood, Paramount, and Whittier.

- Alternative 33--Mandatory Recycling Service Provided by Hauler. This measure would require haulers to provide recycling collection as a condition of their business licenses or franchise agreements.

This alternative was selected by all cities except for Paramount.

- Alternative 34--Contracted or Franchised Recycling Service Provision. Through contracts or franchises, a jurisdiction can organize programs and routes. This may be particularly useful in areas that are either under-served or not served at all by private haulers or recycling collectors.

This alternative was selected by all of the cities except for Bellflower, Paramount, Pico Rivera, Santa Fe Springs, and Signal Hill.

- Alternative 35--Cooperative Marketing of Recyclable Materials. This alternative involves joint marketing of aggregate materials from several jurisdictions. Such an arrangement may ensure a better price and a longer-term arrangement than could be secured if individual municipalities marketed their materials separately.

This alternative was selected by all of the cities.

- Alternative 36--Procurement Procedures Promoting Preferential Purchase or Use of Recycled-Content Products. This measure would specify durability, recyclability, reusability, or recycled material content as a purchasing consideration; it would move municipalities toward recycling objectives.

This alternative was selected by all of the cities except for La Mirada and Norwalk.

- Alternative 37--Changing Existing Rates. Disposal facilities where recyclables processing or drop-off opportunities have been established would charge a lower tip fee (or none at all) for high-grade loads, providing an incentive for haulers and generators to separate recyclables from waste.

This alternative was selected by Downey and Pico Rivera.

- Alternative 38--Financial Incentives. This measure would allow a local jurisdiction to develop tax or accounting incentives, such as sales tax exemptions and investment tax credits, for local investments in recycling, collection, processing, and marketing.

Although discussed, this alternative was not selected by any of the jurisdictions.

- Alternative 39--Educational Outreach and Technical Assistance. Municipalities would conduct workshops for, and give technical assistance to, haulers, businesses, and recycling companies.

This alternative was selected by all of the cities.

- Alternative 40--Green Waste Cover Project. Yard wastes would be delivered to one or more sites established to receive these materials.

This alternative was selected by all of the cities except for Bellflower, Lakewood, Pico Rivera, Santa Fe Springs, and Signal Hill.

Composting

- Alternative 41--At-Source Collection. This measure would allow for pick up of specified yard waste types by municipal crews or contracted haulers.

This alternative was selected by Downey and Pico Rivera.

- Alternative 42--Self-Haul Drop-Off. This measure involves material transported by generators to a site designated by a local jurisdiction as a yard waste drop-off site. The site may be dedicated to yard waste, or may be a solid waste management facility that provides yard waste services.

This alternative was selected by for Artesia, Bell, Bell Gardens, Bellflower, Cerritos, Commerce, Compton, Cudahy, Downey, Hawaiian Gardens, Huntington Park, La Mirada, Lakewood, Lynwood, Maywood, Norwalk, Paramount, Pico Rivera, Santa Fe Springs, Signal Hill, South Gate, and Whittier.

- Alternative 43--Decentralized Pre-Processing and Materials Storage. Under this measure, yard waste is delivered to one of several remote sites for volume reduction and/or densification. After the materials have been reduced in size or densified, they may either be stored temporarily or shipped directly for final processing (composting) or other beneficial use.

This alternative was selected by Artesia, Bell, Bell Gardens, Bellflower, Cerritos, Commerce, Compton, Cudahy, Downey, Hawaiian Gardens, Huntington Park, La Mirada, Lakewood, Lynwood, Maywood, Norwalk, Paramount, Santa Fe Springs, Signal Hill, South Gate, and Whittier.

- Alternative 44--Centralized Pre-Processing and Materials Storage. Under this measure, yard waste is delivered to one or more central sites for volume reduction and/or densification.

This alternative was selected by Pico Rivera.

- Alternative 45--Yard Waste Composting. Under this measure, yard waste composting involves the composting of organic materials derived from landscape maintenance, land clearing, and other activities involving the trimming or removal of herbaceous plantings. Because of the high carbon-nitrogen ratio in these wastes, decomposition occurs slowly and can take up to 24 months to complete.

This alternative was selected by Artesia, Bell, Bell Gardens, Bellflower, Commerce, Compton, Cudahy, Downey, Hawaiian Gardens, Huntington Park, La Mirada, Lakewood, Lynwood, Maywood, Norwalk, Paramount, Pico Rivera, Santa Fe Springs, Signal Hill, South Gate, and Whittier.

- Alternative 46--Mixed Solid Waste Composting. Mixed solid waste composting involves the composting of organic materials derived from the general or residential waste stream. The waste is received at a processing facility where the organic fraction is separated from the non-organic fraction for eventual composting.

Although discussed, this alternative was not selected by any of the jurisdictions.

- Alternative 47--Promotion and Education. This program would educate consumers about the merits of recycling household products and the proper management of these products.

This alternative was selected by all of the cities except Signal Hill.

- Alternative 48--Local, Regional, and/or Financial Incentives for Market Development/Marketing of Products Derived From Yard Wastes and Other Organic Materials. This alternative could include tax breaks or subsidies to businesses producing compost for organic waste materials.

This alternative was selected by all of the cities except Cerritos and Signal Hill.

- Alternative 49--Regulatory Provisions for Commercial Haulers Regarding Collection of Separated Yard Wastes and Other Organic Materials. Under this measure, local haulers of refuse, or local recycling haulers, may be required to provide collection of source-separated yard wastes to residential or commercial accounts.

This alternative was selected by all of the cities except Signal Hill.

Special Waste Programs

- Alternative 50--Used-Tire Program. This program would require development of city programs to increase recycling of used tires. Service stations and tire stores would be requested to provide used tires for resale and to participate in tire recapping and retreading, by separating useable tires.

This alternative was selected by Artesia, Bell, Bell Gardens, Bellflower, Commerce, Compton, Cudahy, Downey, Hawaiian Gardens, Huntington Park, La

Mirada, Lakewood, Lynwood, Maywood, Norwalk, Paramount, Santa Fe Springs, Signal Hill, South Gate, and Whittier.

- **Alternative 51--Construction and Demolition Waste Program.** The inert solids of construction and demolition waste would be the focus of this special waste program. As part of this alternative, each applicant for construction and demolition permits would be required to prepare a plan for how inert solid wastes generated during the project would be segregated and recycled.

This alternative was selected by Artesia, Bell, Bell Gardens, Bellflower, Cerritos, Commerce, Compton, Cudahy, Downey, Hawaiian Gardens, Huntington Park, La Mirada, Lakewood, Lynwood, Maywood, Norwalk, Paramount, Pico Rivera, Santa Fe Springs, Signal Hill, South Gate, and Whittier.

- **Alternative 52--White Goods Program.** This alternative would divert large appliances from disposal, by providing alternative collection and repair options to residents. The program consists of offering periodic collection of bulky items; then separating white goods for donation to charity, for repair and reuse, or for recycling.

This alternative was selected by Artesia, Cerritos, Commerce, Compton, Cudahy, Downey, Huntington Park, La Mirada, Lakewood, Lynwood, Maywood, Norwalk, Paramount, Santa Fe Springs, Signal Hill, South Gate, and Whittier.

- **Alternative 53--Ash Recycling Program.** This alternative requires the design and construction of an ash treatment facility in conjunction with a Refuse-To-Energy Facility already in operation in the City of Commerce. The ash treatment facility will chemically combine the ash in concrete prior to being recycled as road bed material at specific landfills. The ash treatment facility is designed to limit mechanical and chemical exposure hazards to employees at the treatment facility. No shifts in waste type generation are expected.

This alternative was selected by Commerce.

- **Alternative 54--Medical Waste Program.** This alternative consists of providing educational materials to generators of medical wastes to assist them in identifying ways to reduce the amount of waste that must be specially handled. Reduction techniques may include improvement of housekeeping procedures, such as carefully separating refuse from other wastes that must be managed as medical wastes.

This alternative was selected by Bell.

Public Education and Information Programs

- **Alternative 55--Residential Promotional Campaign.** A multi-lingual promotional campaign would be developed to publicize the SRRE. This residential-sector campaign would be initiated in the short term, and would publicize all applicable diversion programs stemming from the SRRE. The campaign would be developed using innovative approaches to promote awareness of, and

participation in, diversion programs, including recognition of individual and neighborhood achievements, contests, and behavioral modification techniques.

This alternative was selected by Artesia, Bell, Bell Gardens, Bellflower, Cerritos, Commerce, Compton, Cudahy, Downey, Hawaiian Gardens, Huntington Park, La Mirada, Lakewood, Lynwood, Maywood, Norwalk, Paramount, Pico Rivera, Santa Fe Springs, Signal Hill, South Gate, and Whittier.

- Alternative 56--Residential Education and Information Program. This alternative would focus on developing multi-lingual educational and informational materials. Plans are to develop such materials in conjunction with other cities that have similar SRRE programs and demographics, to reduce costs.

This alternative was selected by Artesia, Bell, Bell Gardens, Bellflower, Cerritos, Commerce, Compton, Cudahy, Downey, Hawaiian Gardens, Huntington Park, La Mirada, Lakewood, Lynwood, Maywood, Norwalk, Paramount, Pico Rivera, Santa Fe Springs, Signal Hill, South Gate, and Whittier.

- Alternative 57--School Curricula Development. This alternative would provide encouragement for school authorities to develop curricula that educate students about source reduction, recycling, composting, and special wastes in the short term. School authorities may rely on curricula already developed by other cities or states.

This alternative was selected by Artesia, Bell, Bell Gardens, Bellflower, Cerritos, Commerce, Compton, Cudahy, Downey, Hawaiian Gardens, Huntington Park, La Mirada, Lakewood, Lynwood, Maywood, Norwalk, Paramount, Pico Rivera, Santa Fe Springs, Signal Hill, and South Gate.

- Alternative 58--Non-Residential Promotional Campaign. This is development of a promotional campaign that targets large waste generators and non-residents (tourists and visitors), and encourages them to implement diversion programs or to participate in such efforts that help to meet diversion targets.

This alternative was selected by Artesia, Bell, Bell Gardens, Bellflower, Cerritos, Commerce, Compton, Cudahy, Downey, Hawaiian Gardens, Huntington Park, La Mirada, Lakewood, Lynwood, Maywood, Norwalk, Paramount, Pico Rivera, Santa Fe Springs, Signal Hill, South Gate, and Whittier.

- Alternative 59--Non-Residential Education and Information Program. This alternative is the development of educational and promotional materials concerning SRRE diversion programs that target the non-residential sector. These materials will be distributed to those non-residential generators targeted by diversion programs.

This alternative was selected by Artesia, Bell, Bell Gardens, Bellflower, Cerritos, Commerce, Compton, Cudahy, Downey, Hawaiian Gardens, Huntington Park, La Mirada, Lakewood, Lynwood, Maywood, Norwalk, Paramount, Pico Rivera, Santa Fe Springs, Signal Hill, South Gate, and Whittier.

- Alternative 60--Representative Waste Evaluation. This is a plan to select one business and to conduct a waste evaluation of that selected business' waste

stream to demonstrate how the evaluation is done. Results of waste evaluations will be publicized to all businesses.

This alternative was selected by Artesia, Bell, Bell Gardens, Bellflower, Cerritos, Commerce, Compton, Cudahy, Downey, Hawaiian Gardens, Huntington Park, La Mirada, Lakewood, Lynwood, Maywood, Norwalk, Paramount, Pico Rivera, Santa Fe Springs, Signal Hill, and South Gate.

- Alternative 61--SRRE Representative Training Program. This program is developed to train interested non-residential generators to become SRRE representatives who can provide information and assistance on diversion methods, waste evaluations, and other information to other non-residential generators.

This alternative was selected by Artesia, Bell, Bell Gardens, Bellflower, Cerritos, Commerce, Compton, Cudahy, Downey, Hawaiian Gardens, Huntington Park, La Mirada, Lakewood, Lynwood, Maywood, Norwalk, Paramount, Pico Rivera, Santa Fe Springs, Signal Hill, and South Gate.

Over the past several years, many of the Southeast Area Cities included within this study have participated in the development and implementation of a Countywide Household Hazardous Waste (HHW) management effort. The purpose of the HHWE is to examine all possible programs that would address the issue of disposing household hazardous waste. The programs selected by each city within the Southeast Area are the County's HHW Management Program. The alternatives selected by each city (as the County's Program) are listed numerically for easy reference to the environmental checklist and associated discussion. (These numbers do not reflect the numerical system used in the HHWEs).

HHWE

- Alternative 62--Periodic Household Hazardous Wastes Collection Events (County Events). This program would collect household hazardous waste on a periodic basis through the County's "Collection Day Program".

This alternative was selected by all of the cities.

- Alternative 63--Permanent Collection Facility (County Facility). A permanent collection facility provides a fixed location for accepting HHW delivered by residents. Permanent facilities are generally open year-round and are operated on a regional basis.

This alternative was not selected by any of the cities participating in this study; however, it may be added to the County's program in the medium term.

- Alternative 64--Mobile Household Hazardous Waste Collection (County Program). A mobile waste collection program consists of a modified trailer and support unit containing an electric generator, compressor, and water system; a fire response system; and a Hazmat laboratory.

This alternative was selected by all of the cities participating in this study through the County's Program.

- Alternative 65--Door-To-Door Collection. A door-to-door household hazardous waste program is designed to offer residents who are unable to participate in collection programs an opportunity to dispose of household hazardous wastes. This program targets elderly and disabled residents.

This alternative was not selected by any of the cities participating in this study nor was it selected as part of the County's Program.

- Alternative 66--Load-Checking Program. The purpose of a load-checking program is to detect and deter attempts to dispose of prohibited waste at permitted landfills. It involves visual inspection for hazardous wastes at the point of collection and at the unloading point of the landfill.

This alternative was selected by all of the cities participating in this study through the existing load checking program at County landfills.

- Alternative 67--Recycling Program for Household Hazardous Wastes (County Program). This program targets materials that can be readily recycled such as commercial cleaners, pesticides, and paints.

This alternative was selected by all of the cities participating in this study; the alternative will be implemented by the County in conjunction with the County collection programs.

- Alternative 68--Public Education and Information (City and County Program). This program would educate consumers about the hazards of household products and the proper management of these products.

This alternative has been selected by all of the cities participating in this study; each city will implement local education programs to support the County's education program.

These SRR and HHW elements are consistent with the Public Resources Code Section 40000 et seq., and the draft regulations developed by the California Integrated Waste Management Board entitled, "Planning Guidelines for Preparing, Revising, and Amending Countywide Integrated Waste Management Plans," dated December 5, 1990.

The following checklist is based on currently available information. As specific implementation designs are developed for the programs contained in the approved SRR and HHW elements, further environmental assessment may be necessary. Mitigation measures may be required.

SECTION 2

ENVIRONMENTAL CHECKLIST FORM

I. Background

1. Name of Proponent City of Commerce
2. Address and Phone Number of Proponent 3535 Commerce Way
Commerce, CA 90040
(213) 722-4805
3. Date Checklist Submitted October 30, 1991
4. Agency Requiring Checklist City of Commerce
5. Name of Proposal, if applicable Source Reduction and Recycling
Element and Household Hazardous Waste Elements

II. Environmental Impacts

(Explanations of all answers are required and are provided in Section 3.)

- | | <u>Yes</u> | <u>Maybe</u> | <u>No</u> |
|--|------------|--------------|-----------|
| 1. Earth. Will the proposal result in: | | | |
| a. Unstable earth conditions or in changes in geologic substructures? | — | — | <u>X</u> |
| b. Disruptions, displacements, compaction, or overcovering of the soil? | — | — | <u>X</u> |
| c. Changes in topography or ground surface relief features? | — | — | <u>X</u> |
| d. The destruction, covering, or modification of any unique geologic or physical features? | — | — | <u>X</u> |
| e. An increase in wind or water erosion of soils, either on or off the site? | — | — | <u>X</u> |
| f. Changes in deposition or erosion of beach sands, or changes in siltation, deposition, or erosion that may modify the channel of a river or stream, or the bed of the ocean, or any bay, inlet, or lake? | — | — | <u>X</u> |

4. Plant Life. Will the proposal result in:
- | | | | | |
|----|--|---|---|----------|
| a. | Changes in the diversity of species, or number of any species of plants (including trees, shrubs, grass, crops, and aquatic plants)? | — | — | <u>X</u> |
| b. | Reductions of the numbers of any unique, rare, or endangered species of plants? | — | — | <u>X</u> |
| c. | The introduction of new species of plants into an area, or in a barrier to the normal replenishment of existing species? | — | — | <u>X</u> |
| d. | Reductions in the acreages of agricultural crops? | — | — | <u>X</u> |
5. Animal Life. Will the proposal result in:
- | | | | | |
|----|--|---|---|----------|
| a. | Changes in the diversity of species, or numbers of any species of animals (birds, land animals including reptiles, fish and shellfish, benthic organisms, or insects)? | — | — | <u>X</u> |
| b. | Reductions of the numbers of any unique, rare, or endangered species of animals? | — | — | <u>X</u> |
| c. | The introduction of new species of animals into an area, or in a barrier to the migration or movement of animals? | — | — | <u>X</u> |
| d. | The deterioration of existing fish or wildlife habitat? | — | — | <u>X</u> |
6. Noise. Will the proposal result in:
- | | | | | |
|----|--|---|----------|----------|
| a. | Increases in existing noise levels? | — | <u>X</u> | — |
| b. | Exposure of people to severe noise levels? | — | — | <u>X</u> |
7. Light and Glare. Will the proposal produce new light or glare?
- | | | | | |
|--|--|---|---|----------|
| | | — | — | <u>X</u> |
|--|--|---|---|----------|
8. Land Use. Will the proposal result in a substantial alteration of the present or planned land use of an area?
- | | | | | |
|--|--|---|---|----------|
| | | — | — | <u>X</u> |
|--|--|---|---|----------|

g.	The exposure of people or property to geologic hazards, such as earthquakes, landslides, mudslides, ground failure, or similar hazards?	—	—	<u>X</u>
2.	Air. Will the proposal result in:			
a.	Substantial air emissions or deterioration of ambient air quality?	—	<u>X</u>	—
b.	The creation of objectionable odors?	—	<u>X</u>	—
c.	Alterations of air movement, moisture, or temperature, or any change in climate, either locally or regionally?	—	—	<u>X</u>
3.	Water. Will the proposal result in:			
a.	Changes in currents, or the course or direction of water movements, in either marine or fresh waters?	—	—	<u>X</u>
b.	Changes in absorption rates, drainage patterns, or the rate and amount of surface runoff?	—	—	<u>X</u>
c.	Alterations to the course or flow of flood waters?	—	—	<u>X</u>
d.	Changes in the amount of surface water in any water body?	—	—	<u>X</u>
e.	Discharges into surface waters, or in any alteration of surface water quality, including but not limited to temperature, dissolved oxygen, or turbidity?	—	<u>X</u>	—
f.	Alterations of the direction or rate of flow of ground waters?	—	—	<u>X</u>
g.	Changes in the quantity of ground waters, either through direct additions or withdrawals, or through interception of an aquifer by cuts or excavations?	—	—	<u>X</u>
h.	A substantial reduction in the amount of water otherwise available for public water supplies?	—	—	<u>X</u>
i.	The exposure of people or property to water-related hazards, such as flooding or tidal waves?	—	—	<u>X</u>

- | | | | | |
|-----|--|---|----------|----------|
| 9. | Natural Resources. Will the proposal result in: | | | |
| a. | An increase in the rate of use of any natural resources? | — | — | <u>X</u> |
| b. | Substantial depletion of any nonrenewable natural resource? | — | — | <u>X</u> |
| 10. | Risk of Upset. Will the proposal involve: | | | |
| a. | A risk of an explosion or the release of hazardous substances (including, but not limited to, all pesticides, chemicals, or radiation) in the event of an accident or upset condition? | — | <u>X</u> | — |
| b. | Possible interference with an emergency response plan or an emergency evacuation plan? | — | — | <u>X</u> |
| 11. | Population. Will the proposal alter the location, distribution, density, or growth rate of the human population of an area? | — | — | <u>X</u> |
| 12. | Housing. Will the proposal affect existing housing, or create a demand for additional housing? | — | — | <u>X</u> |
| 13. | Transportation/Circulation. Will the proposal result in: | | | |
| a. | The generation of substantial additional vehicular movement? | — | <u>X</u> | — |
| b. | Effects on existing parking facilities, or demand for new parking? | — | — | <u>X</u> |
| c. | A substantial impact on existing transportation systems? | — | <u>X</u> | — |
| d. | Alterations to present patterns of circulation or movement of people and/or goods? | — | — | <u>X</u> |
| e. | Alterations to waterborne, rail, or air traffic? | — | <u>X</u> | — |
| f. | Increase in traffic hazards to major vehicles, bicyclists, or pedestrians? | — | <u>X</u> | — |

14. Public Services. Will the proposal have an effect on, or result in, a need for new or altered governmental services in any of the following areas:
- | | | | |
|---|---|----------|----------|
| a. Fire protection? | — | <u>X</u> | — |
| b. Police protection? | — | <u>X</u> | — |
| c. Schools? | — | — | <u>X</u> |
| d. Parks or other recreational facilities? | — | — | <u>X</u> |
| e. Maintenance of public facilities, including roads? | — | <u>X</u> | — |
| f. Other governmental services? | — | <u>X</u> | — |
15. Energy. Will the proposal result in:
- | | | | |
|---|---|---|----------|
| a. Use of substantial amounts of fuel or energy? | — | — | <u>X</u> |
| b. A substantial increase in demand on existing sources of energy, or require the development of new sources of energy? | — | — | <u>X</u> |
16. Utilities. Will the proposal result in a need for new systems, or substantial alterations to the following utilities:
- | | | | |
|------------------------------|----------|---|----------|
| a. Power or natural gas? | — | — | <u>X</u> |
| b. Communications systems? | — | — | <u>X</u> |
| c. Water? | — | — | <u>X</u> |
| d. Sewer or septic tanks? | — | — | <u>X</u> |
| e. Storm water drainage? | — | — | <u>X</u> |
| f. Solid waste and disposal? | <u>X</u> | — | — |
17. Human Health. Will the proposal result in:
- | | | | |
|--|---|----------|---|
| a. The creation of any health hazard or potential health hazard (excluding mental health)? | — | <u>X</u> | — |
| b. The exposure of people to potential health hazards? | — | <u>X</u> | — |

- | | | | | |
|-----|---|---|---|----------|
| 18. | Aesthetics. Will the proposal result in the obstruction of any scenic vista or view open to the public, or will the proposal result in the creation of an aesthetically offensive site open to public view? | — | — | <u>X</u> |
| 19. | Recreation. Will the proposal result in an impact on the quality or quantity of existing recreational opportunities? | — | — | <u>X</u> |
| 20. | Cultural Resources. | | | |
| a. | Will the proposal result in the alteration or destruction of a prehistoric or historic archaeological site? | — | — | <u>X</u> |
| b. | Will the proposal result in adverse physical or aesthetic effects to a prehistoric or historic building, structure, or object? | — | — | <u>X</u> |
| c. | Does the proposal have the potential to cause a physical change which would affect unique ethnic cultural values? | — | — | <u>X</u> |
| d. | Will the proposal restrict existing religious or sacred uses within the potential impact area? | — | — | <u>X</u> |
| 21. | Mandatory Findings of Significance. | | | |
| a. | Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of rare or endangered plants or animals or eliminate important examples of the major periods of California history or prehistory? | — | — | <u>X</u> |
| b. | Does the project have the potential to achieve short-term, to the disadvantage of long-term, environmental goals? (A short-term impact on the environment is one which occurs in a relatively brief, definitive period of time, while long-term impacts will endure well into the future.) | — | — | <u>X</u> |

- c. Does the project have impacts that are individually limited, but cumulatively considerable? (A project may have an impact on two or more separate resources where the impact on each is relatively small, but where the effect of the total of those impacts on the environment is significant.) — — X
- d. Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly? — — X

On the basis of this initial evaluation:

I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared. —

I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because the mitigation measures described on an attached sheet have been added to the project. A NEGATIVE DECLARATION WILL BE PREPARED. X

I find the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required. —

Date

Richard S. Berry
Signature

For

SECTION 3
DISCUSSION OF ENVIRONMENTAL EVALUATION

EXPLANATIONS OF ALL "NO" ANSWERS

1. Earth

- a.,b.,c., None of the proposed alternatives (Alternatives 1 through 68) will create
d.,e.,f.,g. any significant impact on the earth or its geologic features.

No mitigation measures are required.

2. Air

- c. None of the proposed alternatives (1 through 68) will modify air move-
 ment, moisture, or temperature, or effect any change in climate, either
 locally or regionally.

3. Water

- a.,b.,c., None of the proposed alternatives (1 through 68) has the potential to
d.,f., alter direction or flow of water currents, change absorption rates, alter
g.,h.,i. course of flow or flood waters, change the amount of surface water,
 discharge into surface waters, alter direction or rate of groundwaters,
 change direction of groundwaters, substantially reduce the amount of water
 available for public water supplies, or expose people to water-related
 hazards, such as flooding or tidal waves.

No mitigation measures are required.

4. Plant Life

None of the proposed alternatives (1 through 68) has the potential to cause a significant impact on plant life.

- a.,b.,c.,d. None of the project alternatives will create a change in the diversity of
 species, reduce the numbers of rare or endangered species, introduce new
 species, or reduce acreage of an agricultural crop. The programs discussed
 in the elements address existing developments that produce waste.

No mitigation measures are required.

5. Animal Life

None of the proposed alternatives (1 through 68) has the potential to cause a significant impact on animal life.

- a.,b.,c.,d. None of the proposed alternatives will directly create a change in the diversity of species of animals; reduce the numbers of any unique, rare, or endangered species of animals; or deteriorate existing fish or wildlife habitats.

No mitigation measures are required.

6. **Noise**

None of the proposed alternatives (1 through 68) has the potential to cause a significant impact on noise levels. No construction activities or new noise levels are expected to be generated as a result of implementation of any of the alternatives.

- b. None of the alternatives discussed has the potential to expose people to severe noise levels.

No mitigation measures are required.

7. **Light and Glare**

None of the proposed alternatives (1 through 68) has the potential to generate any new light or glare sources. Light or glare may become an issue upon designation of a site to implement mitigation measures. As there are no project sites under review at this time, there is no impact on the environment.

No mitigation measures are proposed.

8. **Land Use**

No specific locations have been proposed for recycling or buy-back centers that may be in conflict with existing land uses. This may be an issue at the time that jurisdictions begin locating recycling facilities; at this time, however, there is no impact on the environment.

No mitigation measures are proposed.

9. **Natural Resources**

None of the proposed alternatives (1 through 68) has the potential to significantly deplete a natural resource.

- a. The alternatives discussed in the SRRE will not increase the rate of use of any natural resource. The recycling component of the SRRE states that the purpose of its recycling efforts is to preserve the natural resources used in manufactured goods.
- b. The alternatives discussed in the SRRE will not generate a substantial depletion of any non-renewable natural resource.

No mitigation measures are required.

10. **Risk of Upset**

Alternatives 1 through 52, 55 through 61, and 66 through 68 do not pose any risk of upset to the general population, nor do they pose obstacles to emergency preparedness.

- b. The proposed SRRE will not pose any interference with an emergency response plan or an emergency evacuation plan.

11. **Population**

None of the proposed alternatives (1 through 68) will have any effect on population. The proposed SRRE will not alter the location, distribution, density, or growth rate of human population in an area.

No mitigation measures are required.

12. **Housing**

None of the proposed alternatives (1 through 68) will have any effect on housing demand.

The proposed SRRE would not create any significant employment opportunities and, therefore, would not directly create a demand for housing.

No mitigation measures are required.

13. **Transportation/Circulation**

Alternatives 1 through 17, 23 through 25, 27 through 40, 45, 47 through 61, 66, 67, and 68 do not have the potential to generate a significant hazard to jurisdictional transportation/circulation systems.

- b. As proposed, the alternatives discussed do not suggest that there will be any effects on existing parking facilities, nor do they suggest that a demand for new facilities will be created.
- d. As proposed, the alternatives discussed do not suggest that there will be any need for alteration to present circulation patterns or movements of people or goods.

14. **Public Services**

None of the proposed alternatives (except Alternatives 18 through 22, 63, 65, and 66) would affect (or increase) the need for public services.

- c.,d. The alternatives outlined in the SRRE will not affect (or result in the need for any new or altered) government services for schools, parks, or the maintenance of public facilities.

15. **Energy**

None of the proposed alternatives (1 through 68) will result in the use of substantial amounts of energy or fuel.

- a.,b. The measures, as outlined in the SRRE, will not use substantial amounts of fuel. One component of the element, source reduction, suggests ways to conserve fuel, such as a decision to repair appliances, instead of creating, and expending the energy to create, new ones. The SRRE will not create a new demand for existing sources of energy, nor will it require development of new sources of energy.

No mitigation measures are required.

16. **Utilities**

None of the proposed alternatives (1 through 68) will create a significant demand for utility use.

- a.,b.,c., d.,e. None of the alternatives proposed in the SRRE will result in the need for new systems or substantial alterations to power or natural gas, communication systems, water, sewer, septic tanks, and stormwater drainage.

No mitigation measures are required.

18. **Aesthetics**

None of the proposed alternatives (1 through 68) will result in obstruction of any scenic vista or view open to the public, and none will create an aesthetically offensive site open to public view.

No mitigation measures are required.

19. **Recreation**

None of the proposed alternatives (1 through 68) is anticipated to reduce the quality or quantity of recreational opportunities.

No mitigation measures are required.

20. **Cultural Resources**

None of the proposed alternatives (1 through 68) is anticipated to have any impact on cultural resources.

- a. The alternatives discussed in the SRRE should not result in the alteration or destruction of a prehistoric or historic archaeological site.
- b. The SRRE will not generate adverse physical or aesthetic effects to a prehistoric or historic building, structure, or object.

- c. None of the proposed alternatives (1 through 72) has the potential to cause a physical change to the environment that would affect unique ethnic or cultural values.
- d. Source reduction and recycling activities should have no impact on existing religious or sacred uses within these jurisdictions.

No mitigation measures are required.

21. **Mandatory Findings of Significance**

- a. The proposed elements and associated projects would not significantly degrade the quality of the environment in any of the jurisdictions within the project area. No fish or significant plant species exist in the developed areas where recycling efforts will take place; therefore, no significant impacts on these species would occur with project approval.
- b. The proposed elements and project would not achieve short-term, to the disadvantage of long-term, environmental goals, as the purpose of the SRRE is to reduce the amount of solid wastes generated and determine how they will be ultimately disposed. These programs will achieve both short-term and long-term environmental goals.
- c. Approval of the proposed SRRE and HHWE will not cause impacts that will cumulatively be considerable. One chapter within the SRRE is an integration component that explains how source reduction, recycling, composting, and special waste components combine to achieve the State-mandated diversion rates.
- d. Implementation of the proposed elements and projects would not result in significant adverse environmental effects on human beings.

EXPLANATIONS OF ALL "MAYBE" ANSWERS

2. **Air**

- a. The alternatives "Curbside Collection of Separated Materials" (18), "At-Source Separation, and Collection of Recyclables" (19), "Mobile/Stationary Buy-Back Centers" (20), "Mobile/Stationary Drop-Off Centers" (21), "Multi-Family Collection" (22), "At-Source Collection" (41), "Self-Haul Drop-Off" (42), "Decentralized Pre-Processing and Materials Storage" (43), and "Centralized Pre-Processing and Materials Storage" (44) have the potential to generate additional traffic on streets and, thereby, create additional air emissions.

Alternatives 18, 19, 22, and 41 require that commodities be kept in separate containers on collection trucks, requiring the trucks to be emptied when any of the containers reach capacity. This results in the collection trucks returning to the processing or transfer point with less than full loads, thereby requiring an increase in truck travel.

Possible mitigation measures include propane- or methanol-fueled vehicles, and natural gas- or electric-powered equipment and vehicles. Use of alternative vehicle fuel sources will need to be assessed prior to implementation of programs.

Alternatives 20, 21, 42, 43, and 44 would involve travel to a designated location to deliver recyclables. The location of the facility would determine the amount of air emissions generated.

The additional trips that could be generated by the above alternatives are not considered to be significant.

- b. Alternative 45, "Yard Waste Composting," involves the composting of organic materials derived from landscape maintenance. Because this process can take up to 24 months to complete, and, if there is insufficient knowledge about the care of composting piles, there may be a possibility of odor.

This can be mitigated by properly educating the public on how to maintain composting piles.

3. **Water**

- e. Alternatives 20 and 21 may result in recyclable materials and residual contents brought to mobile/stationary centers discharging into surface waters.

Mitigation measures designed to minimize this impact should include the following:

- Design and operation of the mobile/stationary centers should consider proximity to subsurface waters and potential conduits to surface waters.
- The mobile/stationary centers should be operated by facility employees to contain and prevent recyclable materials from discharging to surface waters.

6. **Noise**

- a. Future multiple recycling facilities have the potential to increase existing noise levels. Mitigation measures designed to minimize this impact should include the design and operation of future facilities to reduce noise levels.

10. **Risk of Upset**

- a. Because of the nature of hazardous materials in trash, Alternatives 53, 54, and 62 through 65 have the potential to involve humans and machines with hazardous materials that may inadvertently be placed in trash facilities, which increases the risk of hazards.

Mitigation measures designed to minimize this impact should include the following:

- Design and engineering of any future facility should consider location and storage of hazardous materials. In addition, the risk of combustion of

composting materials will be eliminated through proper facility design and engineering, as well as proper facility operation and maintenance.

- Collection facility employees and the public should be educated as to the hazards of handling hazardous materials.
- Site-specific impacts, if any, and related mitigation measures, if required, will be identified at such time as environmental review and analysis are undertaken for each program and/or facility that implements the SRRE and the HHWE.

13. **Transportation**

- a.,c. Specifically, Alternatives 18 through 22, 26, 41 through 44, 46, and 62 through 65 have the potential to generate additional traffic on streets; but, this traffic generation is not considered significant at the program level of this document.
- e. There may be future reliance on rail transportation to meet the cities' solid waste management goals. Upon establishment of specific programs involving rail, additional environmental documentation will be necessary.
- f. When there is an increase in traffic, no matter how minimal, as discussed above, there is the potential for an increase in traffic hazards to major vehicles, bicyclists, or pedestrians. As the increase in vehicles is proposed to be minimal at this time, as a result of the implementation of the proposed alternative programs, the potential impacts can be considered as not significant.

Mitigation measures designed to minimize this impact should include the following:

- Site-specific impacts, if any, and related mitigation measures, if required, will be identified at such time as environmental review and analysis are undertaken for each program and/or facility that implements the SRRE.

14. **Public Services**

- a.,b. Because of the nature of recycling programs, which require, for example, aluminum cans and glass to be separated and recycled (Alternatives 18 through 22), there may be an attraction to scavengers to remove valuable materials that could be redeemed for money at recycling centers. It is anticipated that additional police activity could be spent addressing scavenger complaints and suspects.

The fire department could become involved if hazardous wastes are illegally dumped (Alternatives 20, 21, 63, and 65) at a recycling facility.

Mitigation measures to address these concerns include the following:

- Any future construction of a recycling facility should include design details that would discourage illegal dumping and should include signage that would describe the penalties for illegal dumping.

- Site-specific impacts, if any, and related mitigation measures, if required, will be identified at such time as environmental review and analysis are undertaken for each program and/or facility that implements the SRRE.
- e. Due to increased traffic, it may be assumed that additional maintenance of public facilities may be required on public roadways.
- f. Educational programs, technical assistance, and review of private-sector recycling plans by the public sector may require additional staff for implementation. The additional personnel will not cause a significant impact on the environment.

17. Human Health

- a.,b. Alternatives such as "Manual Materials Recovery Operations" (23), "Mechanized Materials Recovery Operations" (24), "Salvage at Solid Waste Facilities" (25), "Yard Waste Composting" (45), "Periodic Household Hazardous Wastes Collection Events (County and City)" (62), "Permanent Collection Facility" (63), "Mobile Household Hazardous Wastes Collection" (64), "Door-to-Door Collection" (65), and "Load-Checking Program" (66) have the potential to cause human health hazards.

Because Alternative 45 involves composting and could take up to 24 months to complete, and, if there is insufficient knowledge about the care of composting piles, vermin and insects could be attracted to the pile.

Alternatives 62 through 66 present a hazard when handling hazardous materials. Alternatives 20, 21, and 63 involve buy-back and drop-off centers, which present a hazard with unattended drop-off sites, including the handling of glass containers, potential for contamination of recyclables, and illegal dumping of wastes. Buy-back centers demonstrate a potential hazard in bringing workers and the public in proximity to industrial equipment. There are physical hazards associated with dumping glass and handling other recyclables, as well as with contamination caused by garbage or other materials in recycling containers. Hazards associated with the handling of trash, which exposes people to sharp objects (such as needles, glass, and jagged edges), as well as medical wastes and hazardous materials, are associated with Alternatives 23, 24, and 25.

Mitigation measures that should be designed into project formulation include the following:

- Buy-Back/Drop-Off Centers. Signage that discusses the dangers of contamination of recyclables and handling of glass, and the penalties of illegally dumping hazardous materials, should be prominently posted.
- Permanent Household Hazardous Waste Facility. Signage that discusses the dangers of contamination of recyclables and handling of glass, and the penalties of illegally dumping hazardous materials, should be prominently posted.

- Buy-Back Centers. Design of the center should limit the general public's contact with industrial equipment. Workers should be oriented on how to safely use machinery.
- Manual Material Recovery. A comprehensive orientation program and periodic review of lessons in the orientation program should address the safety concerns and issues associated with direct exposure to the waste stream. Workers should be required to use industry-approved gloves and eye protectors.
- Material Recovery. Orientation and periodic updates should warn workers about the dangers of working with heavy equipment and machinery.
- Yard Waste Composting. These impacts can be mitigated by properly educating the public on how to maintain composting piles.
- Site-specific impacts, if any, and related mitigation measures, if required, will be identified at such time as environmental review and analysis are undertaken for each program and/or facility that implements the SRR and HHW elements.

EXPLANATIONS OF ALL "YES" ANSWERS

16. Utilities

- f. The purpose of the Source Reduction and Recycling Element is to alter solid waste and disposal practices in each jurisdiction. This program would have a positive impact by reducing the source and amount of waste disposed by each jurisdiction.

NEGATIVE DECLARATION

In accordance with The City of Commerce policies regarding implementation of the California Environmental Quality Act, the City of Commerce has conducted an Initial Study to determine whether the following project may have a significant adverse effect on the environment and on the basis of that study hereby finds:

☐ The proposed project will not have a significant adverse effect on the environment; therefore, it does not require the preparation of an Environmental Impact Report.

☒ Although the proposed project could have a significant adverse effect on the environment, there will not be a significant adverse effect in this case because the Mitigation Measures described in the attached Initial Study and Environmental Assessment have been added to the project. An Environmental Impact Report is therefore not required.

The attached Initial Study and Environmental Assessment provides the basis and reasons for this determination.

PROJECT:

TITLE: Initial Study for the City of Commerce Source Reduction, Recycling and Household Hazardous Waste Elements

LOCATION: The City of Commerce

DESCRIPTION: The Source Reduction, Recycling and Household Hazardous Waste Elements for the City of Commerce has been prepared in response to AB 939 which proposes programs which will substantially reduce amounts of waste generated by its citizens.

PROJECT PROPONENT: City of Commerce

DIVISION/DEPARTMENT:

RESPONSIBLE FOR PROPOSED PROJECT: _____

ADDRESS: 2535 Commerce Way, Commerce, California 90040

CONTACT PERSON: _____

TELEPHONE: _____

NOTICE:

This document is provided for review by the general public. This is an information document about environmental effects only. The decision-making body will review this document before considering the proposed project.

This Negative Declaration may become final unless written comments or an appeal is received by the office listed above by 4:30 p.m. on _____. If you wish to appeal the appropriateness or adequacy of this document, address your written comments to our finding that the project will not have a significant adverse effect on the environment: (1) identify the environmental effect(s), why they would occur, and why they would be significant, and (2) suggest any mitigation measures which you believe would eliminate or reduce the effect to an acceptable level. Regarding item (1) above, explain the basis for your comments and submit any supporting data or references.

Signed: _____

Dated: _____

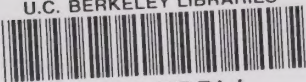
SECTION 4

MITIGATION MONITORING PROGRAM

This mitigation monitoring program has been prepared in conformance with Section 21081.6 of the State Guidelines for the California Environmental Quality Act (CEQA) which states that when adopting a negative declaration, the public agency shall adopt a reporting or monitoring program in order to mitigate or avoid significant effects during project implementation.

The intent and purpose of Assembly Bill (AB) 939 is to require county and city jurisdictions to prepare elements that will propose programs to substantially reduce amounts of waste generated by their citizens. These programs, as proposed, are preliminary in nature and do not detail how each selected alternative would be designed and implemented. Upon development and implementation of these programs, it may be determined that they are considered a "project" under CEQA requirements and that they require further environmental documentation.

The mitigation monitoring program is that during subsequent facility design review, permit processing, and program review by each responsible jurisdiction, the mitigation measures identified herein shall be confirmed for implementation as appropriate. For example, signage requirements would be reviewed in building plan check and inspection, public education programs would be pursued by planning or public safety (i.e., fire, building) departments, and facility siting and design requirements would be checked during site plan building plan checks and fire department review. Additionally, subsequent environmental review of individual facilities and programs encompassed within this overall program may engender other site-specific mitigation measures. Such measures would include their own mitigation monitoring programs.



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SECTION 1

MUTUALITY MONITORING PROGRAM

The mutual monitoring program is a key element of the mutual monitoring system. It is designed to ensure that the mutual monitoring system is effective and efficient. The mutual monitoring program is designed to ensure that the mutual monitoring system is effective and efficient. The mutual monitoring program is designed to ensure that the mutual monitoring system is effective and efficient.

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